605 v.15-16 2025 8813a

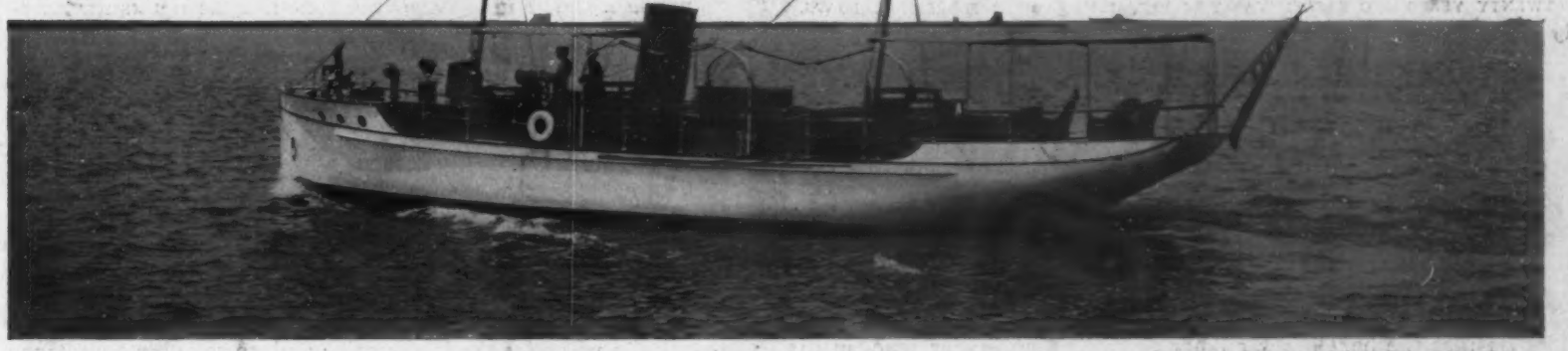
YACHTING

VOLUME XV, NUMBER 1 JANUARY, 1914 25 Cents a Copy $2.00 a year

Avoiding the Sham in Boats and Engines

Getting at an Appreciation of Recognized Boat and Engine Standards by a Review of the Development of the Gasolene Engine and Motor Boat

By HERBERT L. STONE



A 60-FOOTER WHICH SHOWS THE EFFECT OF NAVAL ARCHITECTURE AS APPLIED TO POWER BOATS IN PRODUCING AN ABLE, SEAWORTHY AND SYMMETRICAL CRAFT

For some time certain conditions in boat and engine building that have menaced the sport of power boating have aroused the apprehension and regret of the organized industry. These consist of the placing on the market of inferior and poorly built boats and engines, carrying a worthless and irresponsible guarantee, in competition with those craft that are honestly built to conform to recognized standards. This is an evil that affects directly every boat owner, and especially the newcomer to the sport. It is the purpose of this and subsequent articles in YACHTING to combat this state of affairs, and by showing up the unscrupulous and by giving the boat user facts from which he can form a proper appreciation of what is good and what is bad practice in boat and engine building, to better these conditions.

EVERY man who takes to the water for recreation or for a livelihood has a right to expect that his craft shall be able, well-built, reliable and, above all, properly designed to meet the conditions that are bound at times to be imposed upon her by wind and sea. He has a right to know that if he ever gets caught in a tight place where he has to drive for his life, he has a *real* boat under him and need not worry as to whether or not she will hang together or keep the water out until a sheltering lee is won.

Yet, as a rule, being ignorant of the technical side of boat or engine building or of the elements that make for proper design, he trusts blindly to what someone else puts into his hands when he parts with his purchase money, not knowing whether the outfit he has bought is fit for the service he expects of it, whether it is strong enough to withstand even the short, steep wind-hubble of landlocked waters, or reliable enough to "keep-a-going" in the face of adverse conditions. Nevertheless, in it he puts blindly forth to adventure where angels fear to tread—which only serves to emphasize the old saying that the Lord takes care of a fool.

Luckily for him, however, the majority of boat and engine builders in this country not only build honestly but know their business and can turn out a proper kind of outfit for any particular service, provided they understand in advance the requirements and are let alone. The development of the motor boat in particular in the last dozen years has been along progressive, sane lines and there has been evolved a seaworthy, comfortable and safe boat of the various types that is a credit, both to the boat-building industry and to naval architecture.

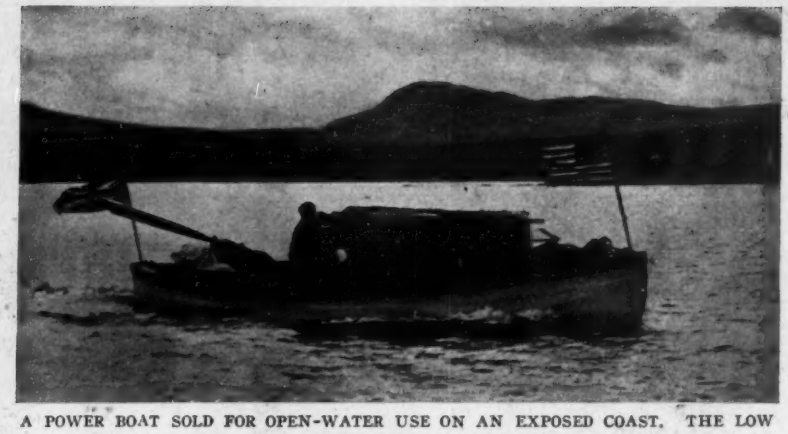
Unluckily, on the other hand, with this better development and the phenomenal growth of pleasure boating, due to the advent of the power boat, a lot of unscrupulous and ignorant builders and manufacturers have trailed along in the wake to reap the profit that others have sown. Clinging like leeches to the larger body, these men have turned out a lot of shoddy stuff masquerading under a coat of paint and varnish, until the waters are all too plentifully covered with a lot of humpbacked, hogged crates and tubercular, rattle-trap engines with which they have managed to "sting" some of the uninitiated—and occasionally some that are not so uninitiated as they seemed when handing over the money, the desire to get something for nothing temporarily blinding them to that well-known axiom of commerce.

The evil is a vital one. It is a real menace to the better development of the sport and, also, to the boat and engine industry, for not only does every man who finds he has bought a good-sized gold brick get "sore" on the game and on all those connected with it in a business way, but by reason of this lure of cheap prices and a reckless guarantee, those that do build honestly find it hard to sell at a fair profit.

To hammer the point home, just read the following extracts from a letter written recently by one of those who had been "stung" by putting too much faith in a *printed guarantee*—easy enough to print and publish, but with nothing tangible back of it. We quote:

> DEAR SIRS:—Having served as "goat" in almost everything applicable to motor boats, from the purchase of a non-sinkable metal boat, which could not be kept afloat, to the buying of a speed craft from a maker who took my money and the bankrupt law at about the same time, and who caused me all kinds of annoyance before I finally came into possession of the boat I had bought and paid for, I am anxious to dissect the "five-year guarantee" slogan for the benefit of my brother boaters.
>
> I have an engine that is guaranteed for five years. It is gradually coming to pieces after two years' service, and I have had some similar experience with the guarantee. When anything gives way, I send it in, carriage prepaid, for the firm would not accept it "collect." Then I receive a letter that their experts are going to hold a post-mortem on the remains, and that they will give an unbiased decision as to whether or not the part was defective. Now I know that these experts are drawing pay from the firm, and that they are not going to give the engine makers the worst of it; so along comes a second letter, that reads about like this: "We have examined the part and find no defects in it. The breakage was due to a lack of oil, which caused the thing-um-bob to jerk up against the ju-ju-mast, and a new one will cost you $——, and will be forwarded immediately upon receipt of price." Barring the price for the part the letters are always the same.

TWENTY YEARS AGO STEAM WAS THE PREVAILING POWER FOR SMALL BOATS. IS IT ANY WONDER THE SPORT DID NOT BECOME POPULAR?



A POWER BOAT SOLD FOR OPEN-WATER USE ON AN EXPOSED COAST. THE LOW FREEBOARD, HIGH HOUSE AND OPEN COCKPIT MADE IT UNSUITABLE FOR THE WORK

Laugh at this, brother boatman; it is funny! But it is still more laughable when the dishonest engine maker has the main part of your engine and demands your money before he ships anything back to you.

I have driven autos for ten years, and never in that time have I experienced the unkind handling from the auto-engine makers that has been my lot during my motor boating experience. F. S. O.

N. B.—If you want to know all about that wonderful engine, send a self-addressed envelope to me and I will give details and names.

This is an actual letter. It is only one of many. Every publisher has received them at times, usually in complaint of a guarantee printed in his particular publication.

Besides the boat builder there is the engine maker who, in his anxiety to separate the newcomer to the sport from his wad, guarantees ten-horsepower in an engine that he sells for the price of a three-horsepower and which, from any taint of a brake test, is as unsullied as a sailor after a year's deep-water voyage. When installed in the boat it is supposed to drive, the power goes about as far as a ten cent piece in a Broadway restaurant.

Then there is the manufacturer who will sell a boat for a service for which he knows it is not in any way suited, just because he does not happen to make the type that is required. This is one reason why there are so many unseaworthy and impossible tubs along our coasts and Great Lakes. The number is such as to make one wonder why life insurance rates are not higher.

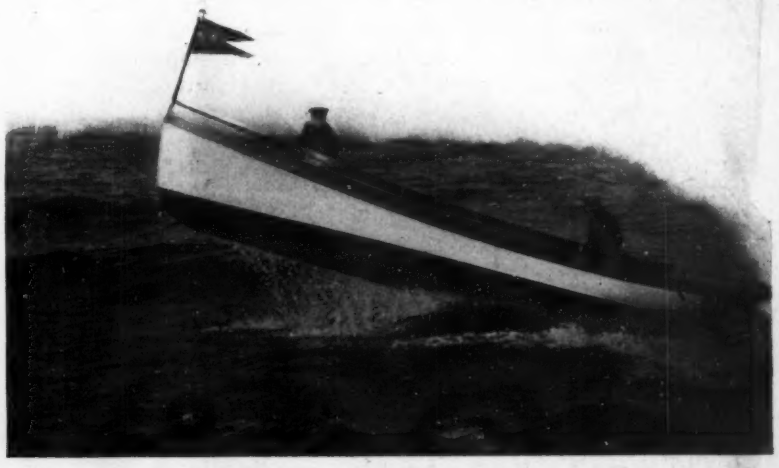
One case comes to mind of a man who wanted a 30-foot cabin motor boat for exploring the exposed coast of Labrador. After explaining the needs of the service and the conditions likely to be encountered, and being assured by the maker that the boat he was looking at would fulfill them in every way, he paid over his money satisfied that he was going to have just the craft he needed. He never saw the boat again until it was shoved overboard some months later on the bleak Labrador coast. Not only were material and workmanship so rotten as to make her absolutely unsafe for the work intended, but she was of a type entirely unfit for open water. The wrathful owner was then aware that the boat's designer didn't have anything on Noah, and it was a good thing for her builders that they were something over 2,000 miles away at the time.

But these are not the only reasons why there is so much "punk" stuff floating around where there should be *real* boats. There is another side to the question, and one that puts the blame squarely up to the boatman himself. In many instances when a man is having a boat built, he immediately starts in to haggle about the price and tries to beat the builder down. If the builder is not strong enough financially to turn the job down rather than skimp the work, he will take the lower price and, to save his own bacon, will trim here and there, cutting where the owner will not see it and turning out an inferior job. When the owner, who has been congratulating himself that he has driven a good bargain and is getting his boat at the expense of the builder's profit, wakes up after the boat is in his hands, he finds that he has no more than he paid for and that his boat has never been finished, judging from the repair bills that keep piling up. Then, of course, he is sore.

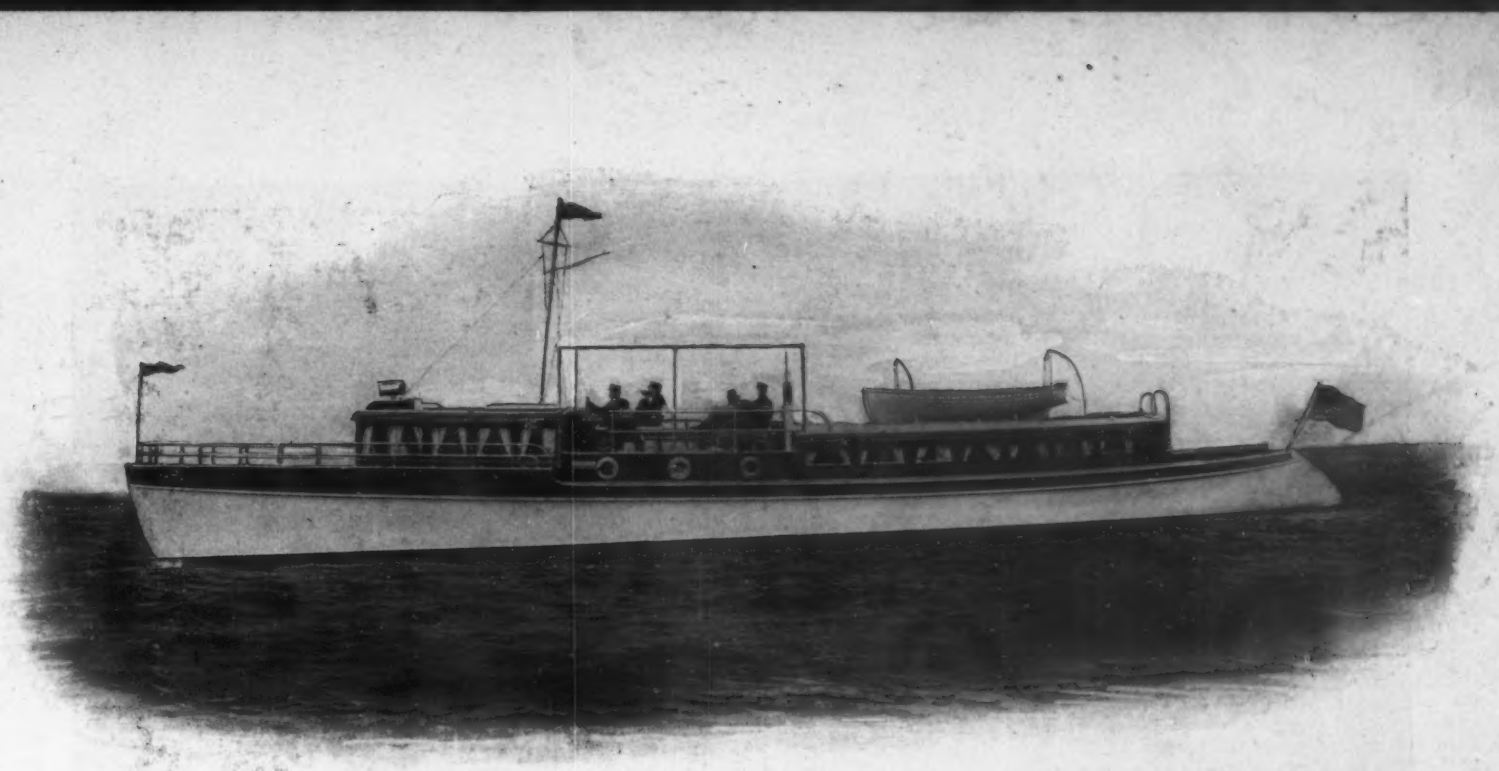
The results of this kind of dealing are seen in the large number of boats with only about half the material in them that they should have and thrown together in any old way, so that they will pass their trials and be accepted. As a well-known naval architect puts it, "The sooner these men get over the idea that they can get a seven-jeweled watch for the price of an Ingersoll, the quicker will such conditions be wiped out."

One has only to look at the offerings of second-hand boats to see how much junk has been turned out in the last ten years as the results of these conditions—the faker on the one side and the builder who is willing to cut his price and turn out inferior work on the other. The yards are full of such trash that can't be sold. Yet the really good boats, those built on integrity with enough and the proper kind of material in them, not only find a ready market but hold their price. The well-built boat or engine, made

THE NARROW, SHALLOW, CRANKY LAUNCH OF EARLY DAYS IS STILL FREQUENTLY SEEN ON INLAND RIVERS AND LAKES, AND WHILE ALL RIGHT IN SMOOTH WATER——



WOULD BE TOTALLY UNFIT FOR ANY OPEN STRETCHES WHERE THERE IS A CHANCE OF GETTING A JUMP ON, AS SHOWN HERE



A CRUISER OF THE TRANSITION PERIOD, WITH LIGHTLY BUILT DECK HOUSES, THAT SHOWED WHAT THE POWER BOAT WAS CAPABLE OF EIGHT YEARS AGO BY MAKING A TRIP FROM CHICAGO TO NEW YORK BY WAY OF THE MISSISSIPPI, GULF OF MEXICO AND ATLANTIC COAST

on standardized lines by a firm with a reputation for honest work is always a distinct asset and can be sold when the owner is through with it at a good figure. It is only the poor boats that deteriorate rapidly in value. This is a point that is usually overlooked in the purchase of a bargin counter outfit.

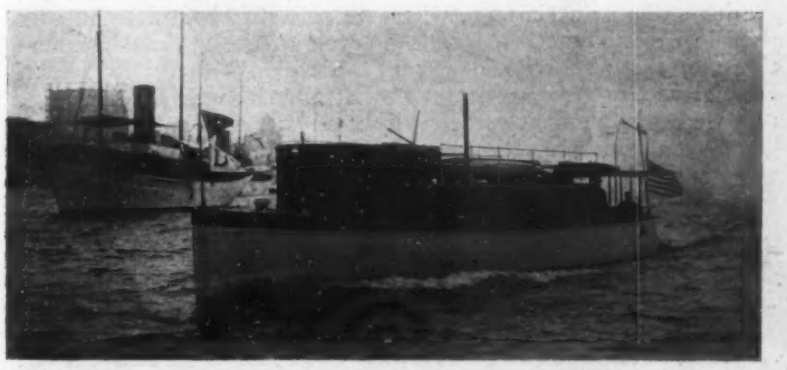
Previous to the advent of the internal combustion engine and the motor boat, the boat-building business was on a much smaller scale and the hulls were built almost wholly to order, either by a few of the larger shops or by boat builders with small plants, most of whom knew their trade and took pride in turning out a good grade of work. With the wonderful increase in the number of pleasure boats due to the use of gasolene engines for marine purposes, the boat and engine industry has grown at an astonishing rate; but on account of this rapid growth the conditions just mentioned have been able to creep in. Those builders and manufacturers who have high ideals and through whose efforts the development of boats and engines has been brought about, frequently fail to get the work that should be theirs because some beach-comber with a shed, an ax and a saw, or some machinist with a lathe and a set of dies, will cut the price in half and turn out something that will stand up just long enough to let them "put it over" on the purchaser. It is disheartening to those builders, manufacturers and naval architects to whose efforts and integrity we must look for the better development of both boat and engine and, through these, for the growth of the sport at large.

It is only by taking a firm stand to build the best, and only the best, and not to permit competition of an inferior product to regulate the standard of workmanship or price that a builder or manufacturer can get a fair return on his investment and the business grow along right lines, to the everlasting benefit of the boatman.

This is not by any means to be interpreted as meaning that only those boats and engines that are sold at a high price are worth while. Far from it! There is a very fixed and definite place for the moderate and low-priced hull and motor—in fact there is a much larger field for these than for the more expensive, highly finished product—but the governing factors in the manufacture should be the same in both cases. A cheap boat and engine should be built on honesty and integrity, of good material, and be able to do what is claimed for it. A low price should never be deemed an excuse for inferior workmanship and misrepresentation. The bone we are picking is not with the makers of boats and engines that can be sold cheaply because they are manufactured economically by standardized methods, close attention to details and the ability to buy cheaply in large quantities; but with those makers who sell cheaply by reason of poor material, inferior workmanship and an all-around skimping of the job.

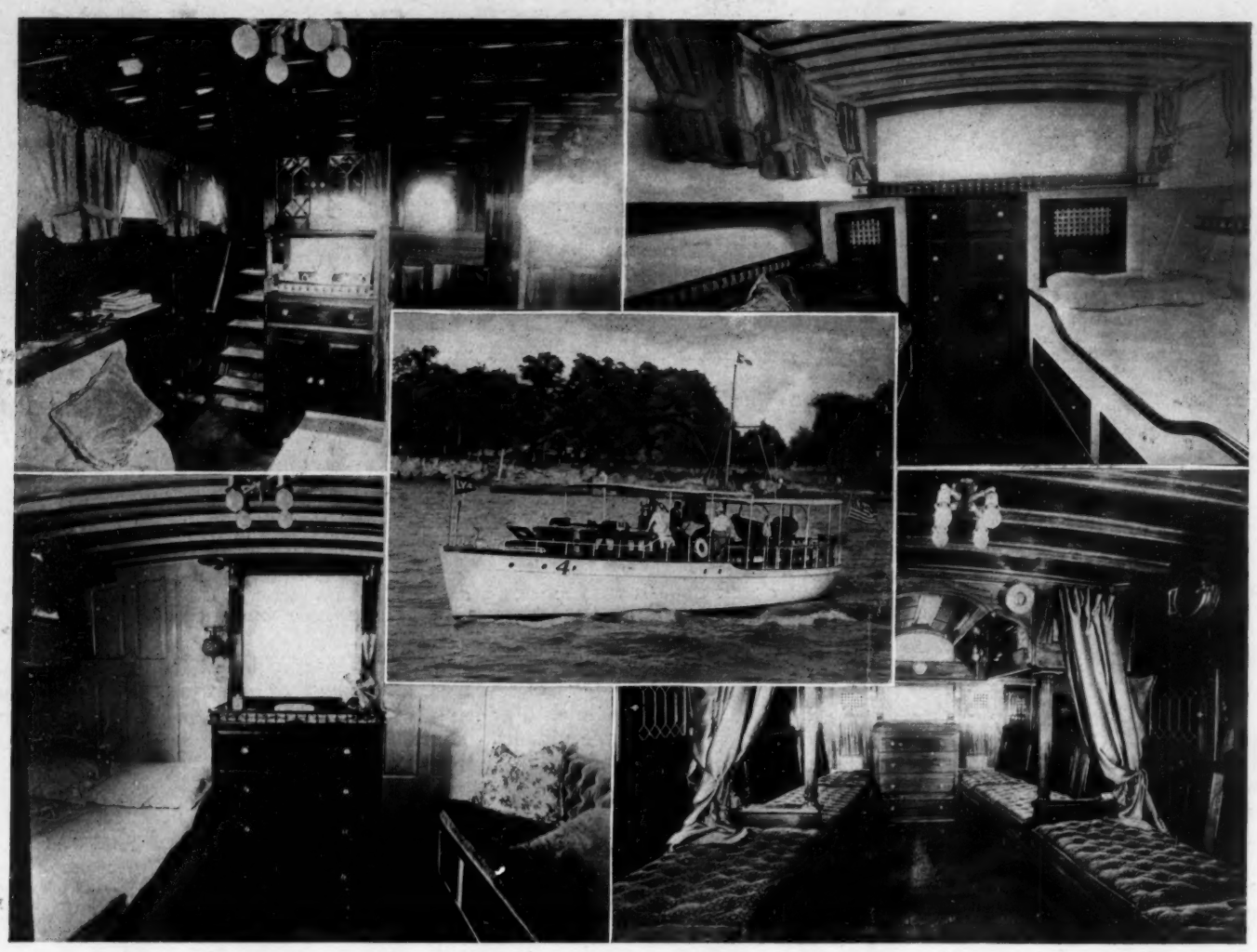
The man who realizes the demand for a six-horsepower engine that can be sold for about $100 and is able to turn out one of that price as the result of intelligent thought, close figuring and manufacturing in quantity, deserves some protection from the faker who sells an engine which he claims to be the same horsepower and equally good at the impossible price of $39.50, and who, by his business methods, is responsible for putting the Tee-Hee in Guarantee. This latter class is never brought to task for the harm they may do. Those who have bought and been burnt usually take their loss and say nothing about it, not caring to go to the expense of redress by law, and as long as these men can go on advertising their preposterous claims and printing their worthless guarantee alongside of the advertisements of responsible makers the merry game will go on.

We firmly believe that this condition of affairs is wrong and an injustice alike to the men who participate in the sport and to



A CROSS BETWEEN THE OLD AND THE NEW TYPES. THE HIGH AND UNSIGHTLY DECK HOUSES SPOIL THE PROPORTIONS OF AN OTHERWISE GOOD HULL

A 36-FOOT CRUISER BUILT ABOUT TWELVE YEARS AGO BY AN AMERICAN COMPANY FOR THE LATE KING CARLOS OF PORTUGAL FOR HUNTING TRIPS



THESE INTERIORS NOT ONLY SHOW THE COMFORT AND ROOM POSSIBLE IN A MODERATE-SIZED POWER CRUISER, BUT ALSO THE HIGH GRADE OF WORK DONE BY THOSE WHO BUILD THE BEST THEY KNOW HOW—WORK THAT IS THE EQUAL OF THAT IN THE LARGEST STEAM YACHTS

those on whom the future development of boat, engine and equipment are dependent.

YACHTING intends to make a strong stand against such corrupt practices, which are a contagion that must be eradicated from the system. It is going to show up bad conditions as they exist and by a series of articles, enlightening and at the same time constructive, will bring home to the boat user and owner how he can help this condition of affairs and how much of the responsibility is his. By knowing what the proper standard is, by being able to tell the good from the bad, and demanding and being content only with the former, vastly improved conditions will result.

With this object in view, we have prepared a series of articles that will trace the growth and evolution of the motor boat and gasolene engine from the time the latter replaced steam for small boat use, through the various stages of progress and show what has been accomplished towards arriving at the present high standard of safety, reliability and efficiency by those men whose aim has been the improvement and perfection of design, and building the best they knew how, rather than lining their pockets with quick profits. What they have achieved has been the result of experiment, experience and the hard test of time; and through a knowledge of what has been done, the boatman may have a better understanding and appreciation of his craft and of the elements that must be taken into consideration in her design, building and equipping.

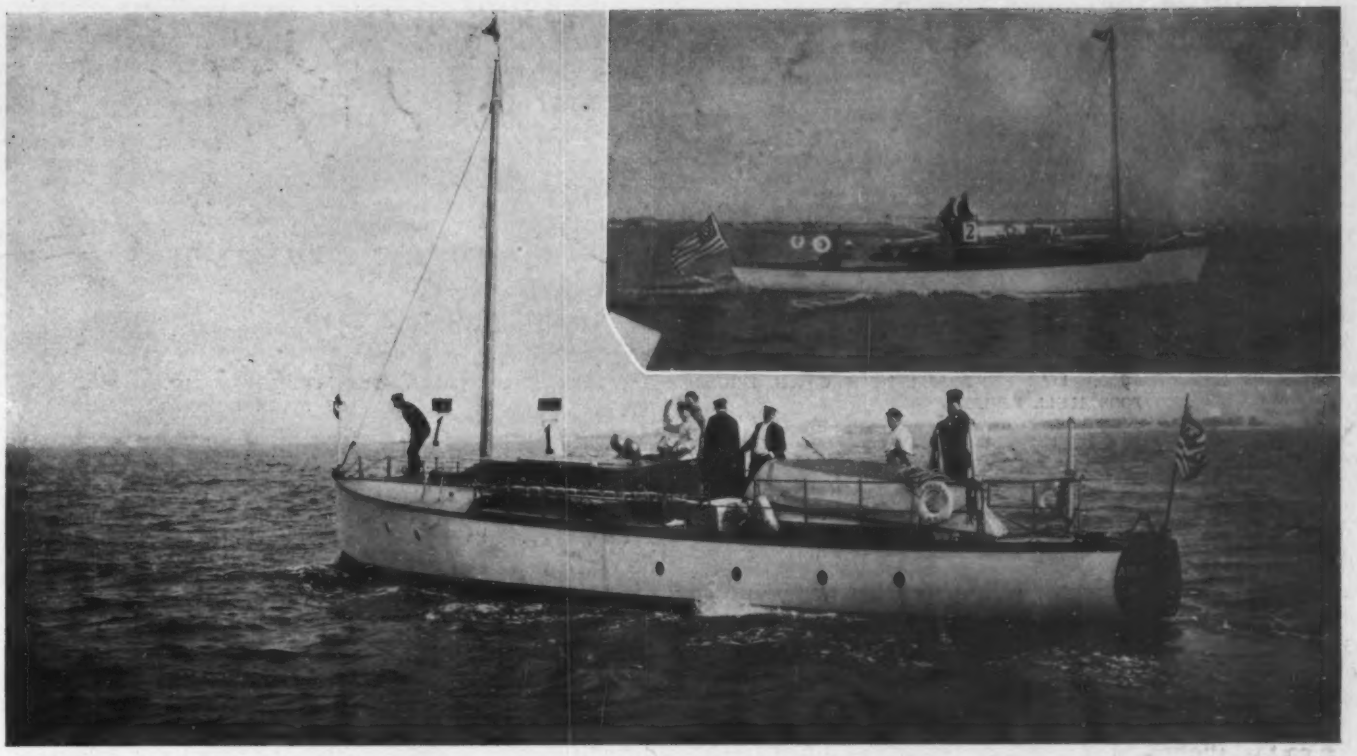
Then boat and engine equipment will be taken up, showing how important a part these play in the safety, efficiency and ability of the modern boat, and yet how frequently they are neglected or are of inferior quality and design. No one would think of taking an automobile trip without an adequate lighting system and an extra tire equipment; yet a man will go to sea in a first-class, well-built motor boat with a cheap set of lights that he cannot keep burning in a breeze, with an underweight, cast-iron anchor, and a set of deck fittings that would make an old sailor blush for shame.

These articles will expose so forcibly the bad spots that now exist, and the harm that they do the individual and the sport at large, and will point out so clearly the difference between the good and the bad, that there will be no excuse for those that read if they let such bad conditions continue to exist through their support. While in a every line of industry there will probably always be those who do business on the basis that "a sucker is born every minute," yet by an intelligent campaign, based on giving to the consumer a better understanding of conditions and a fuller knowledge of what he buys, especially in so important a thing as boats and engines, these parasites can be prevented from flourishing to a dangerous extent.

ADAPTING THE GASOLENE ENGINE TO MARINE USE

Although the gasolene engine was successfully operated in 1876, the invention of a German, whose name, Otto, is still frequently used in describing the principle or cycle of the internal combustion motor, it remained for others to develop it for various commercial and marine uses, and it was almost twenty years later that we began to see it successfully used on water in this country. The successful application of the Otto-cycle principle (which is what is commonly known as the four-cycle principle) for marine use, is due to the pioneers in the gas engine field, while the names of Nash and Day in England and Sintz in the United States are associated with the early efforts to produce a two-cycle motor built on somewhat similar lines and receiving an impulse at every revolution instead of at every other revolution, as in the four-cycle.

At the time it began to be thought of as applicable for boat use the only powers then suited for small craft were steam and the



AILSA CRAIG AND IDAHO (INSERT), WHILE SHOWING THE WORLD WHAT POWER BOATS COULD DO AT SEA, WERE WIDELY DIFFERENT. AILSA CRAIG, DESIGNED ESPECIALLY FOR OCEAN SERVICE, WAS VASTLY SUPERIOR TO IDAHO, WHICH WAS NOT AT ALL SUITED FOR SEA WORK

various types of vapor engines, such as the naphtha, made by the Gas Engine and Power Company; the Alco-Vapor, the Daimler, etc. The first of these, steam, by reason of its bulk and the care and attention it required, was totally unfit for small boat use; and steam launches, while built, were never greatly in public favor. Hence it made but a feeble stand against the new type of power, which had so many things in its favor, such as lightness, compactness, cleanliness and ease of operation, the only thing against it at first being its lack of reliability.

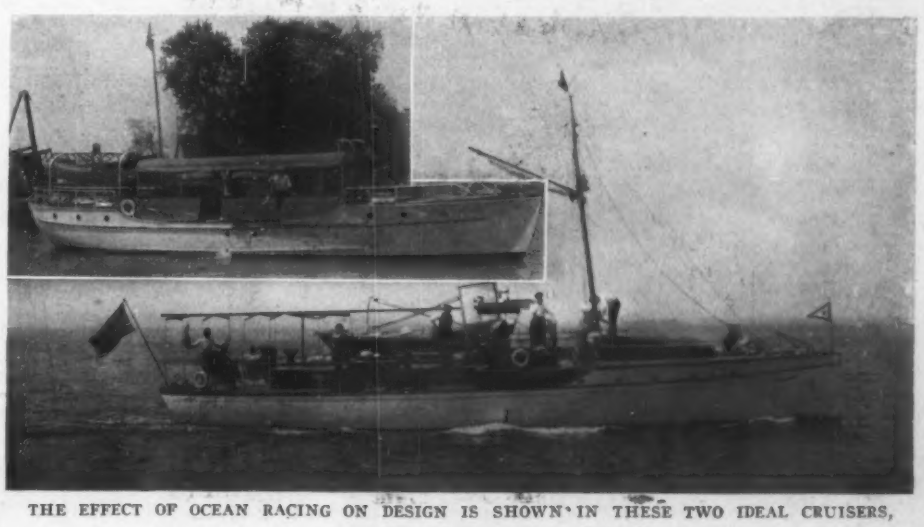
With the hot vapor engines the case was somewhat different, for they were vastly superior to steam for small boat use, weighed less than a steam outfit and were reliable. But as the gas engine became perfected, as the result of patient experiment and improvement by the early builders, it offered so many advantages in the way of saving of weight and space, simplicity and safety, to say nothing of cost, that it rapidly replaced the older types of power; and along about 1898 and 1899 and the first year of this century, it became the only recognized power for small boats.

But even then its idiosyncrasies being but little understood, it was held in distrust by many yachtsmen and followers of the water, and came in for a good share of abuse which only the lapse of years and the making of a perfect and reliable machine could quiet.

These first engines were crude affairs as viewed to-day. They were extremely heavy and cumbersome and the charge of compressed gas was usually fired by a heated tube or bulb, electricity not being used for ignition until the engines had already proved their adaptability for boat use. Indeed, the application of electric ignition systems, while probably the greatest single step in the development of gasolene engines, was looked upon with extreme disfavor by many builders, who believed that the average person knew nothing about electricity and that it only made an added complication of doubtful value.

Most of these early engines were of the four-cycle type and were consequently heavy and somewhat complicated, but little attempt being made to cut down weight. The two-cycle type was not at first looked upon favorably and to many people it did not seem reasonable to combine successfully in two strokes, or one complete revolution, what required four strokes of the piston in the motors they knew about.

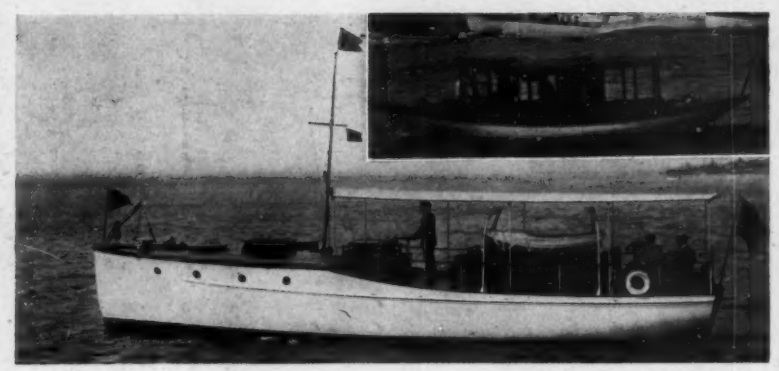
But those early makers took off their coats and tackled the job for all there was in them and, while building the best they knew, they still had time to experiment and design, and try new devices, striving all the time to see how *good* they could build according to their lights, rather than how much they could "clean up" on each engine; and it is pleasant to record among those pioneers that started in a small way because they had faith in the new power and built on integrity, even lying awake nights to figure out how they could improve their motors, the names of many individuals and firms who are to-day the leaders in the industry.



THE EFFECT OF OCEAN RACING ON DESIGN IS SHOWN IN THESE TWO IDEAL CRUISERS, CALIPH AND VOYAGER

Some of the early developers of the gasolene engine dropped out of the race, and, strange as it may seem, most of those who might be called the introducers of the marine gas engine, inasmuch as they brought it into common use in this country, did not make a success of building them. A story is told of seeing the pioneer, Sintz, working over one of his early engines in a boat Mr. Lorrillard had built for this

THE GLASS CABIN CRUISER OF 1900. LOW FREEBOARD, HIGH CABIN HOUSE AND POOR HULL DESIGN



A STUDY IN CONTRASTS. THE "CRUISER" OF 1900 AND A MODERN 45-FOOTER OF STOCK DESIGN

new power, with tears running down his face at his failure to get it started, while the owner looked on and swore bitterly.

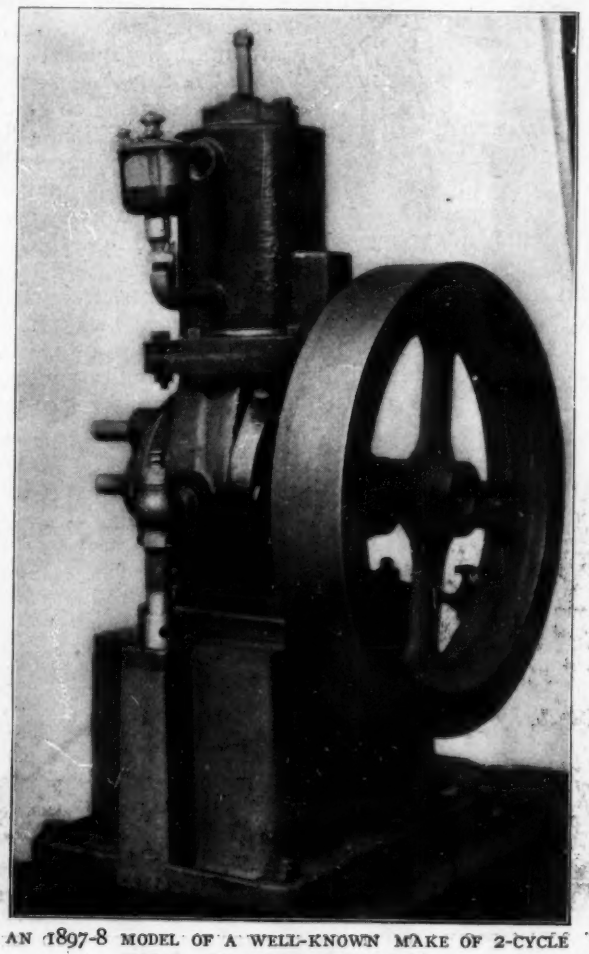
Nearly all of the first engines were single-cylinder, or at most two-cylinder affairs, and, owing to imperfect carburetion, did not develop the power for their size that is now common. The maker of one well-known engine says that when he began building in 1896 even generator valves or vaporizers were unknown, and what was called a carburetion tank was used instead, consisting of a portion of the fuel tank partitioned off from the rest of the tank by means of a swash plate. In this compartment, swinging from the upper part of the wall of the tank, was a short piece of brass or iron pipe so that the end of it would swing up and down freely. In the lower end of the pipe several small holes were drilled. This lower end was kept just above the level of the gasolene in the tank by means of a ball float supporting the end of the pipe. The outside end of the pipe where it passed out of the tank was connected with a hose which led to the fresh air intake valve at the base of the motor, a brass receptacle into which the gas was drawn directly from the surface of the gasolene in the tank through the rubber hose.

The invention of the spraying carbureter has also contributed largely to the success and development of the gasolene engine. Without this, or electric ignition (unless some substitutes had been found), we could not have the efficient machine made to-day. They made possible the multi-cylinder engines with their greatly increased power, while the builders saw to cutting down needless weight, employing higher-grade and better-fitted material, and to the introduction of the many refinements and improvements that have brought about the most powerful condensed engine of modern times.

This choice of materials is an important factor both in regard to strength, wearing ability and weight. When the business first started it was impossible to get castings made close enough to allow the cylinder walls and water jacket walls to be made less than 5/8 inch thick. Even then the floating of cores would cause one side to be, possibly, not over 1/8 inch thick, while the other side of the cylinder and water jacket might be fully an inch thick. The foundry work in connection with gas engine building has kept pace with other developments, so that now the castings will not vary over 1/64 inch in thickness, enabling the builder to get his weight down 1/3 and still retain all the strength. The crank shafts and connecting rods were of cast steel, while now the common practice is forged steel, usually a special alloy, or nickel steel, to give greater strength and durability, with greater attention paid to bearings and all moving parts and wearing surfaces. It is good material, *plus* workmanship, that puts "life" into an engine, and there is no place where the unscrupulous can save as easily as by the use of poor material. The outside is covered by a coat of paint, and the inside is covered, anyway, and a purchaser does not know until his engine falls to pieces that he has bought a lemon.

With the growth in the number of cylinders came higher engine speed, and where 350 to 400 revolutions per minute was normal 15 years ago, to-day 1,400 revolutions are maintained without difficulty. With this, however, the antiquated oiling methods had to be superseded with oiling devices that would deliver the "dope" unfailing and in just the proper quantity to the many pistons and bearing surfaces. This is especially true as regards racing engines, in which a tremendous advance has been made in the last three years, as will be told in a later chapter on the racing boat.

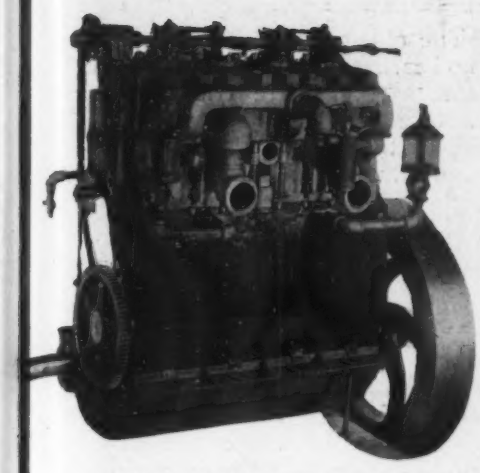
The rapid development and growth in popularity of the two-cycle engine need special mention here. In the early days of the business most of those who built two-cycle motors did so only with the idea of meeting the demand of people who were not willing to pay the price of a four-cycle machine. They could not be induced to put any more money in their product than was absolutely necessary to get something that would run. "Why build an expensive two-cycle engine?" they said, for if the cost was to be high the user would rather purchase a four-cycle machine. Therefore, what was wanted in the two-cycle engine was merely a cheap engine, quality having little to do with the demand for it, the demand being created merely by the price.

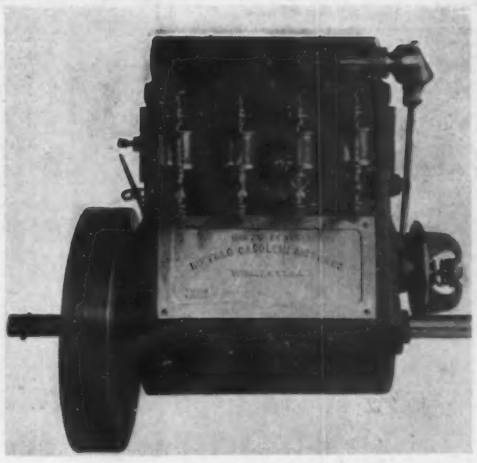


AN 1897-8 MODEL OF A WELL-KNOWN MAKE OF 2-CYCLE MOTOR. NOTE SIZE OF FLY-WHEEL

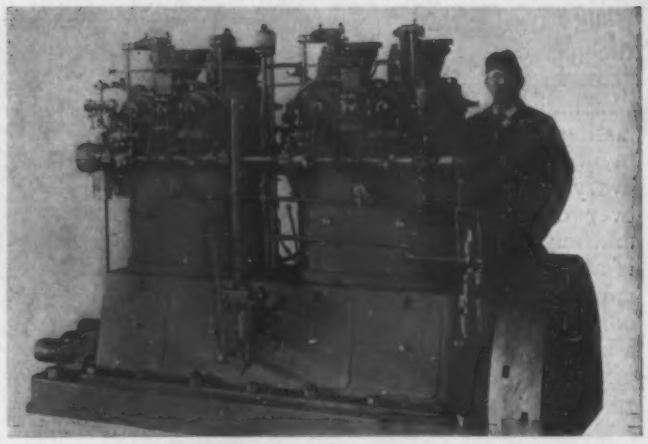
This attitude was short-sighted and resulted in a lot of cheap junk being turned out; whereas those makers who have built their business on a firm foundation realized that it lay with the two-cycle builders to bring their type of engines to as high a state of perfection as possible, and to demonstrate that for certain work it was just as satisfactory as the four-cycle type. If, in order to do this it was necessary to make a more expensive engine they would have to charge more for it, rather than to try to skimp and turn out an inferior product that would give the whole type a black eye. It is due to these men that the two-cycle engine occupies the assured position that it does to-day.

It is interesting to note in passing the growth in horsepower of the marine motor. At first from 2 to 20 horse-





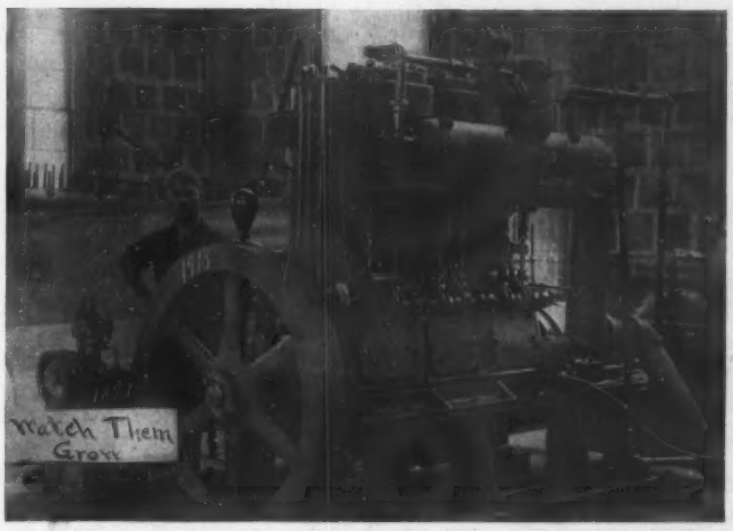
SOME EARLY TYPES OF FOUR-CYCLE GASOLENE MOTORS OF ABOUT 7 HORSEPOWER



A 4-CYLINDER, 160-HORSEPOWER ENGINE OF 1901. CONSIDERED A MARVEL OF COMPACTNESS AT THE TIME

power was about all that was attempted for boat use. At the World's Fair in 1893 the largest stationary gas engine there was 35 horsepower, yet now from 300 to 350 horsepower is quite common for marine use, 500 horsepower is occasionally seen, and better than 1,000 horsepower is common in stationary gasolene engines, while in the Diesel type even much larger horsepower is common.

Boat users and the general public are becoming more motor-wise than they were and are not afraid of large power as they were at first. An example of the general ignorance concerning the gasolene motor with which builders had to contend at first, may be cited in the case of a complaint of a customer who had bought a standard make of internal combustion engine that he could not get to run at all. On investigation, the company found that in installing his engine he had piped his exhaust line *into the fuel tank*. Is it any wonder engines did not run well at first?

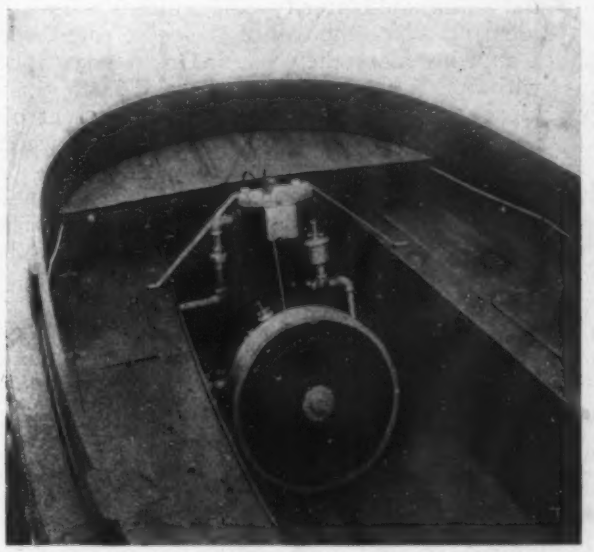


TWENTY YEARS OF GROWTH AT ONE GASOLENE ENGINE FACTORY

The chaotic period of experiment in a more or less haphazard way, with no thought toward standardization, that marked the advent of the new power is passed, just as it is in the automobile field. The basic principles of the gasolene engine are thoroughly understood; we are no longer going ahead blindly, but in general the principles of manufacture are becoming standardized.

This might, with profit, go even further than it has toward some recognized standard test of measurement, for this is badly needed at present. Horsepower means one thing to some manufacturers and another to others. Brake tests frequently are not applied, and two engines of the same bore, stroke and speed have widely different ratings. Many a man has paid for 20 horsepower and never gotten more than two-thirds of that figure, as he has found to his sorrow when he has "stacked up" against some boat that he has been wanting to "trim." A brake test should be the standard and should be applied in every case. It is due to the purchaser that he gets in power what he pays for, just as much as in workmanship and material. It is power that he wants and believes he is purchasing.

It is only by setting up certain recognized standards in the engines themselves (and in selling methods as well) and adhering



THE EARLY INSTALLATIONS USUALLY FAVORED THE STERN

A MODERN INSTALLATION THAT LEAVES LITTLE TO BE DESIRED

rigidly to them that the gas engine will grow in popular favor and insure the lasting conversion to motor boating of every man who has ever owned a boat and engine. And it is only by standardizing manufacturing methods in an individual factory and building *right* that engines can be turned out to fulfill satisfactorily the demand for good motors at a low price.

A GLASS CABIN LAUNCH OF SOME TEN YEARS AGO, POWERED WITH AN 8-HORSEPOWER DAIMLER MOTOR, CONTRASTED WITH A MODERN DESIGNED BOAT OF ABOUT THE SAME SIZE AND POWERED WITH A 25-HORSEPOWER MOTOR

THE DEVELOPMENT OF THE MOTOR BOAT

The coming of this new type of power for small boat use brought with it a new problem for the boat designer. The small steam launches that up to that time had been in use had, as a rule, been evolved without much thought as to design or fitness for the work they were asked to do. As long as they would hold the engine and boiler and leave a little space at each end for crew and passenger, it was all that was asked of them. Not much thought was given to stability, seaworthy qualities or ease of propulsion, and the waste of power by reason of poor hull form must have been scandalous.

It was natural when the smaller, internal-combustion engines began to make a claim for recognition for boat use that they should be tried in the same type of craft used for steam. So they were put into open boats of the steam launch model, and at first all the efforts of builders were toward developing the *power* rather than the boats, as was but natural, seeing that the business was in the hands of machinists, and the boats were built largely according to their ideas of what a power boat should be. All rules of naval architecture were frequently violated and the result was that, even up to a recent date, abominations in the way of hulls were common in boats powered in a satisfactory manner.

One exception to this condition must be noted, and that is in the naphtha launches, which were designed on scientific lines by the firm holding the patent on this particular type of engine, and were able, well-built boats that commanded the respect of boat builders.

In those days regular boat and yacht builders were inclined to be very skeptical of "manufactured" boats, as they called any of those built in a factory and turned out in quantity from a stock model. This was natural, as by building in quantity each boat got less attention, and there was a chance for poor workmanship to creep in, while the material could not be as carefully selected. However, that passed away with the employment of naval architects to do the designing and with a fuller appreciation by manufacturers of the requirements of high-class work. There is no reason now why a stock boat should not be as well built and durable as any other kind if a careful selection of material is made and proper inspection of the work maintained—in other words, if it is built *right* from the inside out. And there is no question that a boat built along standardized lines can be turned out for less money than where each one is handled separately.

With the naval architects getting busy on the job, brains of full human weight were flung into the problem and the result was at once apparent in the vastly improved types of boats that were turned out. The old abominations, the hybrids of steam boat, rowboat and steamship models, were abandoned; overhanging clipper bows, cutaway underbodies and ocean steamship sterns in boats under 35 feet long began to disappear, and in their places came properly designed hulls, with fair curves, making them easy to drive; good sections with plenty of flare forward, proper sheer, etc. The old counter stern, which gave no bearing aft, went by the board any many types were tried in its place, some of which had to be discarded, as they could not stand the test, while others proved their worth and have stuck.

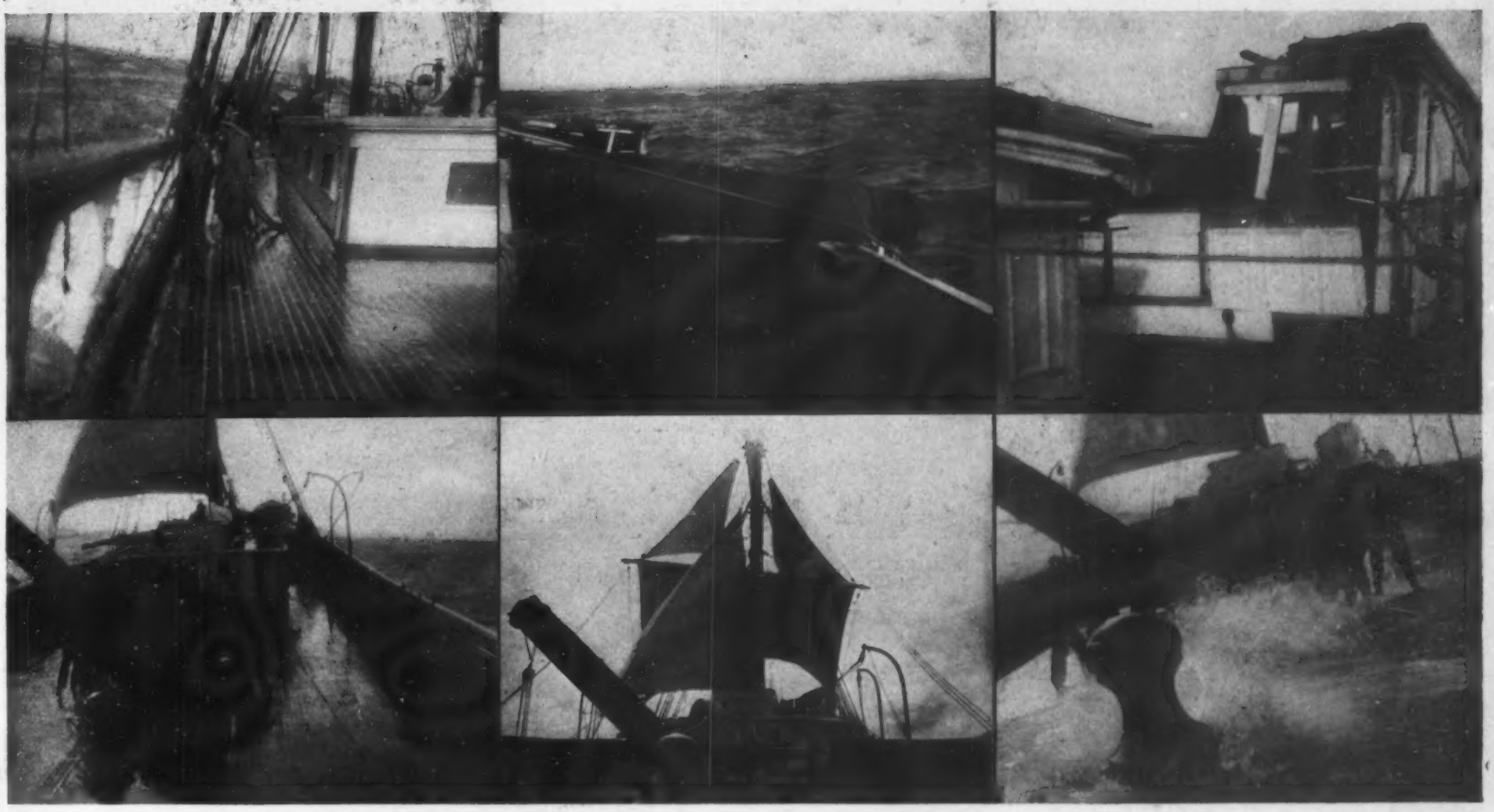
At first most of the boats that had cabins were given a high glass-windowed house that was not only unsightly, but tended to make the boat topheavy, was not watertight and could be easily smashed in a sea. They were built unduly high, to give the much-desired head room below, and this, coupled with the light displacement, made the boats extremely unseaworthy.

The first departure in this direction was the adoption of the trunk cabin, borrowed from the sail boat, and the ceiled cockpit, which made a much abler boat, as it was entirely enclosed and would keep the water out. Then came the raised deck forward, which gave more room below and produced a better proportioned hull, and, if properly designed, a drier one. Some head room had to be sacrificed in the smaller boats, but it was not of as much importance as stability, and one must not expect full head room below in a little boat under 35 feet in length. It is this demand for "head room" in little craft that is responsible for most of the "misfits" that one sees to-day. The glass cabin did not make much of a stand against the "decked in" boats, which is a good thing from the standpoint of seaworthiness.

Then came the ocean races, first the Marblehead, and then, in 1907, the Bermuda race, with the result that the designers—and others also—learned a lot they did not know before in regard to power boat design for rough water service. It is not to be inferred from this that all of the boats that have gone in these races have been of the best type. In the six Bermuda races that have been held a number of boats have taken part that were palpably unfit and should not have been allowed to start—some on account of improper design and others because they were poorly built. One boat, in particular, went down that was thrown together so hastily that she leaked top and bottom and there wasn't a dry place in her.

But on the whole the effect of the race has been to produce a more seaworthy and all around better type of cruiser—a boat that answers well the demand which the call of the sea created, for a boat that could go anywhre along the coast or Great Lakes for an extended cruise with both safety and comfort, and in the hands of an amateur skipper. It brought about the development of a type other than one fit only for short day trips in protected waters.

In all motor boats people are demanding, more and more, that they must give the same satisfaction and have as good an engine equipment as the automobile does on land; and this is one of the things the builders of both engine and boat must see to if they are to get and hold the interest of any considerable portion of the public. It is possible to buy to-day for the price of a high-powered automobile a cruiser of from 40 to 45 feet in length that will give a man more service, more comfort, more fun (presuming that he likes the water) and a wide radius of action at less operating cost. And many men can be induced to become boat owners if there is no question as to their getting a square deal—in other words, 100 cents' worth of boat and engine for every dollar invested. That he does get this in most cases goes without saying. *That he doesn't always, why he doesn't and how he can assure himself immunity if he only will, is told in the next installment.*



THE STARBUCK HOVE TO IN THE GALE THAT DISMASTED HER

MANNING THE PUMPS

WHEEL HOUSE AND STUMP OF MIZZENMAST FROM TOP OF MAIN CABIN

THE JURY RIG ON FOREMAST

WHEEL HOUSE WRECKED BY FALLING MIZZENMAST

SEAS BREAKING ABOARD AS THE MEN WORK AT PUMPS

Dismasted on a Cape Horn Passage

Being an Account of the Loss of the American Ship, Tillie E. Starbuck, in 1907, as Told by the First Officer's Log

ON April 10th, 1907, the full-rigged American ship Tillie E. Starbuck towed down to the old, red Sandy Hook Lightship, cast off the hawser and started on her long voyage around the Horn to Honolulu, Sandwich Islands. She was in command of Captain Wm. Winn, and her crew consisted, besides the Captain, of the first and second mates, carpenter, sixteen foremast hands, cook and steward. In addition to the crew, there was one passenger aft, a young man making the voyage for his health. The log does not tell what effect the subsequent events had on his constitution, but we are indebted to him for the very unusual photographs of the wreck.

Nothing more was heard from the ship until August 22d, four and a half months later, when her crew were landed at Coquimbo, Chile, by the British ship Cambuskenneth, which had taken them off their vessel, which was then in a sinking condition, some six days before.

After rounding Cape "Stiff" in the dead of the southern winter, and getting well to the westward and northward, the Starbuck had all three sticks taken out of her in a hard gale. For eighteen days she drifted around in this condition, the crew several times nearly abandoning hope, until they were picked up by the British ship.

The story is best told in the brief, terse, entries in the ship's log kept by the chief officer. The ship was dismasted in about latitude 47° 10′ S., longitude 81° 25′ W., the general drift thereafter being north by west. The daily entries of latitude and longitude and barometer readings, as well as regular routine entries, are omitted in the subsequent narrative for the sake of brevity:

LOG OF CHIEF OFFICER OF SHIP TILLIE E. STARBUCK, OF SAN FRANCISCO, JULY 30 TO AUGUST 16, 1907

Tuesday, July 30, 1907: Lat. 47° 50′ S., Long. 81° 35′ W. Begins cloudy with fresh S. W. wind.

8:00 A. M.—Moderating, with clear weather. Set cross-jack and main topgallantsail. Repaired futtock staffs in fore topmast rigging. Wind hauling northerly with heavy S. W. swell running. Lights, pumps, etc., attended.

12:00 M.—Light N. N. W. wind with heavy S. W. swell. Crew at work on rigging. Furled mainsail at 6 P. M. Wore ship at 8 P. M. Heavy sea still running. Blowing up strong and took in fore and mizzen upper topsail. Blowing a gale of wind from N. W. with high seas.

Wednesday, July 31, 1907: Wore ship at midnight and again at 2 A. M. Furled foresail. Blowing a gale of wind and sea running mountains. At 10 A. M. fore-topgallant mast carried away, and a few minutes afterward fore-topmast and main topgallant mast went, and after that the mainmast and mizzen went just above the decks. Yards and masts going through main and poop deck. Water pouring into the hold in torrents.

Finally succeeded at filling up holes in decks with sails, planks or any available material. All hands at work cutting away masts and rigging. Cabin completely demolished by falling spars and bulwarks all twisted up. Ship in a dilapidated condition.

At 8 P. M. had everything cut clear. On sounding found 30 inches of water in hold and pumps disabled, but overhauled them and got them working. Seas going completely over ship; expecting her to founder at any minute. Captain badly hurt by being caught in mizzen rigging as it fell, and had to be carried below.

Thursday, August 1, 1907: 4:00 A. M.—No change at all in weather. Wind N. N. W. Ship flooded continually. Cabin full of water and bulkheads and doors all adrift.

Three men, one of them the cook, laid up through getting hurt when mainmast fell. Pumps kept going constantly. Canvas keeps getting washed away off holes in deck, and it is almost impossible to get around to do anything. Sea, if any change at all, worse.

12:00 M.—Wind taking off somewhat and backing to S. W., but a

THE MAINMAST AS IT WAS HELD BY HOLE IN DECK

THE CAMBUSKENNETH WHEN FIRST SIGHTED

FROM FORECASTLE HEAD, SHOWING JURY RIG AND STUMP OF MAIN AND MIZZENMASTS

dreadful sea running. Rigged stay from the foremast head and set a stay-sail. Wind hauling southerly. All hands at work to get things cleaned up some. Water still gaining in hold. Ship drifting N. W.

Friday, August 2, 1907: Wind southerly. Sea going down. Got two more sails bent on foremast, which gave ship steerageway. On looking ship over found her a complete wreck. Carpenter and two men were set to repairing starboard main pump, which had choked. On going down into poop deck found bulwarks had started from main deck and several holes in ship's side above waterline. Main deck all adrift around mainmast. Seams all opened out. Bilge pumps kept going continually, but not gaining on water. Drift N. W.

Saturday, August 3, 1907: Wind S.; moderate. Sea going down considerably. All hands at work fixing up decks. Ship's top sides all torn to pieces.

8:00 A. M.—Wind hauling northerly. Pumps kept going.

12:00 M.—Almost calm; heavy sea coming from the north'ard. Breezing up with heavy sea running and ship rolling rails under. Rain and lightning with terrific wind and sea. Drift southerly.

Sunday, August 4, 1907: Strong N. W. gale. Sea making clean breach over ship. Almost impossible to get around decks. Stores broke adrift in storeroom and every place below flooded. Kerosene oil and flour lost, with most other stores.

12:00 M.—Wind blowing with hurricane force and ship rolling terribly. Cargo adrift in after-hold, and canvas and planks washing away off holes in decks, the water running into them in torrents.

Ship unmanageable, with no sail we can set, and lying in trough of sea. Skylights and companionway gone off cabin. Captain still laid up below. Wind hauling southerly.

Monday, August 5, 1907: Moderating, but terrible sea running. All hands on pumps; got starboard main pump to work at 9 A. M. Worked at pumps all day, gaining on water gradually.

Cleared up at noon. Wind hauling S. W. Moderating, sea going down again. One watch went below at 8 P. M., as all hands were played out.

Captain came on deck this afternoon.

Midnight.—Clear. Drift northerly.

Tuesday, August 6, 1907: Light southerly wind; sea going down. Pumps kept going steadily.

On going down through 'midship ventilator, found that the heel of mainmast was just catching partners under main deck. All main deck planking and beams started amidships; water going down in torrents.

Rigged topgallant yard on foremast and bent a topgallantsail on it.

Got water down to 17 inches, and then set all hands at work trying to stop leaks in deck.

Drift northerly. No sail sighted since we were dismasted.

Wednesday, August 7, 1907: 8:00 A. M.—Breezing up from the north'ard and sea getting up.

12:00 M.—Breeze increasing to a gale. Ship flooded fore and aft. Cabin full of water all the time.

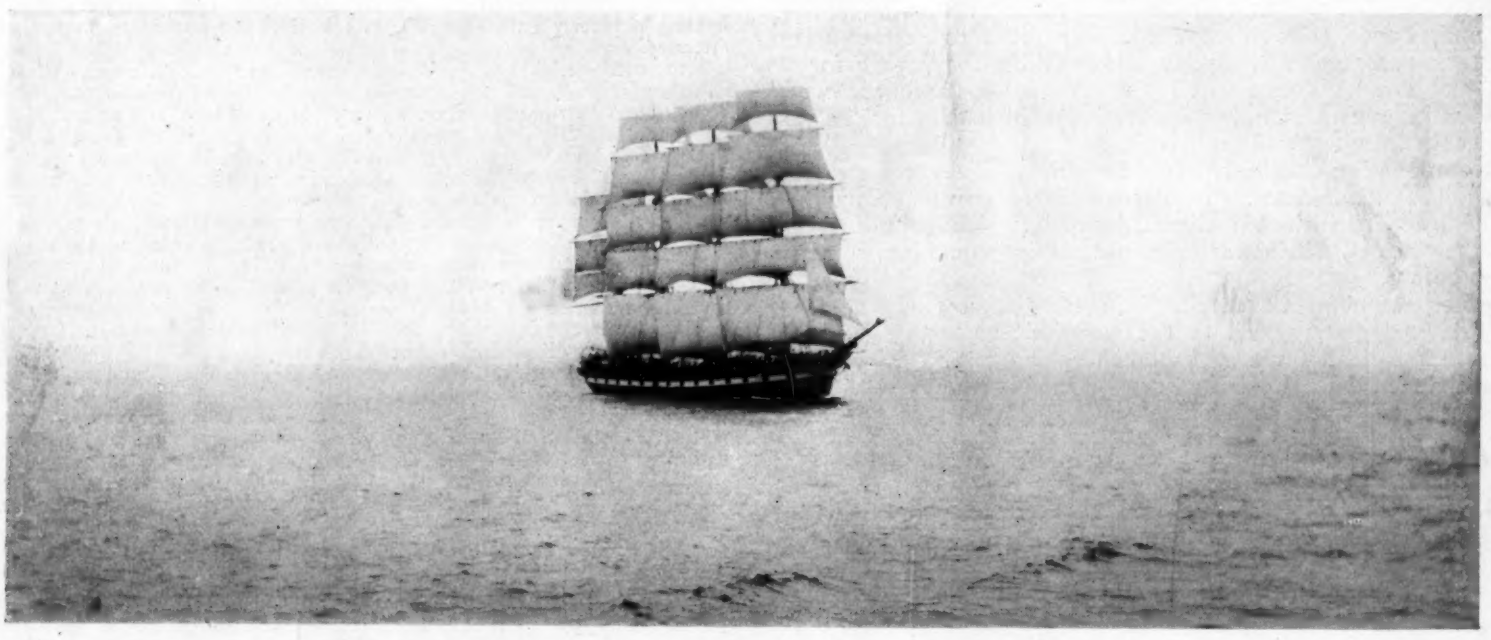
8:00 P. M.—Rain and strong winds. Storeroom flooded again. Impossible to keep anything around the holes which masts and yards broke in the deck.

Wind hauling southerly, with heavy rain and lightning. Drift up to midnight southeast.

Thursday, August 8, 1907: Wind S. Moderating; sea going down.

Crew, with carpenter, busy securing decks and working pumps.

8:00 A. M.—Clearing up and wind hauling S. E.



"AT TWENTY MINUTES TO TWO WE HAILED THE BRITISH SHIP CAMBUSKENNETH"

THE FORECASTLE HEAD, SHOWING FOREYARD WHERE IT FELL

THE LAST OF THE STARBUCK, ON FIRE, AUGUST 16, 1907

Cook, who was badly hurt, is getting worse. No sail sighted yet.

12:00 M.—Light winds and cloudy. All hands on duty, cutting up sails, canvas and any available material to secure decks with.

On crawling along on top of cargo in 'tween decks found that the waterways were cracked.

At 2 P. M. cook died; washed and dressed him and laid him out in the donkey room.

Light winds and smooth sea with showers. Drift N. W.

Saturday, August 10, 1907: Begins with light southerly winds.

Rigged a couple of tri-sails above the jury foreyard.

Finished cutting mainmast adrift, and got it overboard. Buried cook at 8 A. M.

12:00 M.—Cloudy and wind baffling from S. to S. E. Light rain showers.

8:00 P. M.—Cloudy with heavy southerly swell, but light winds. Drift N. W.

Sunday, August 11, 1907: Begins light southerly winds and partly cloudy.

Started pumping ship at 6 A. M.; 11 inches in hold by sounding rod. Reduced water to 6 inches, at which pumps sucked.

Very light winds and clear weather. Ship has no steerageway, owing to light winds.

8:00 P. M.—Pumps and lookout attended. Drift northerly.

Monday, August 12, 1907: Begins almost calm; ship drifting S. E. Crew at work getting rigging in readiness for jury mainmast.

On coming on deck at 11 A. M., found that the carpenter had broken down the bulkheads in the pump well and let cargo all adrift; on speaking to him about it he told me to go to hell; that I was not his boss, and he would do as he liked. Refused duty and had to put him in irons.

8:00 P. M.—Wind, N. N. W. Drift, S. S. E.

Tuesday, August 13, 1907: 8 A. M.—Moderate, but looking stormy.

12:00 M.—Breezing up to a gale from the north'ard. Heavy sea running and ship rolling badly. Main deck full from rail to rail.

4:00 P. M.—Rain, with wind increasing; at 8 P. M. moderating and sea going down.

Pumps and lookout attended; 7 inches in well.

Wednesday, August 14, 1907: Begins rain and strong S. W. winds. Ship rolling badly, shipping large quantities of water.

12:00 M.—Clearing up somewhat and sea getting higher. Pumps kept going and rest of crew at work getting gear ready for jury mainmast.

4:00 P. M.—Breezing up to gale. Ship flooded fore and aft. Wind hauling westerly. Average drift N. E.

Thursday, August 15, 1907: Strong westerly winds backing into the S. W. Moderating at noon but high sea on. Impossible to rig any jury mast owing to heavy sea.

8:00 P. M.—Breezing up again, with heavy rain. Ship in trough of sea, rolling dreadful. Drift N. E.

Friday, August 16, 1907: Begins light winds but heavy sea running. Crew at work at patching up decks and pumping.

At 10 A. M. made sail on our weather bow. All the crew came aft and told the captain that they wished to abandon ship. Ran up the ensign, Union down.

At twenty minutes to two we hailed the British ship Cambuskenneth. Crew again came aft and said they wished to abandon ship. Asked the captain of said Cambuskenneth to take us off, which he consented to do. As our boats were disabled he sent his boat, half of ship's company going at a time, captain and officers remaining to the last.

On leaving set fire to ship in all holds, forward and aft, that she might not be an obstruction to navigation. At 8 P. M. ship appeared to be ablaze fore and aft, distant about 11 miles from her.

Most of the ship's company lost all their personal effects.

On August 22d, six days later, the Cambuskenneth landed the crew of the Starbuck at Coquimbo, Chile. Captain Winn was in rather a bad way from his injuries and had to go to the hospital, subsequently being taken to San Francisco, where he was in the hospital for a long time.

Annual Meeting of the American Power Boat Association

THE annual meeting of the American Power Boat Association was held in New York on November 25 and was well attended, delegates from 46 clubs in the association being represented. The report of the president showed the association to have had a very satisfactory growth during the year, the number of individual clubs holding membership in it being now past the 150 mark. Owing to the formation of a number of local sections, as far apart as California and New Brunswick, the field of activity of the association is spreading fast.

The most interesting report was that of the Race Committee appointed last year to control and supervise all sanctioned races held by the association, it being deemed necessary to maintain this supervision in order to bring about some uniformity in racing and to do away with extravagant claims to "championships" and speeds. During the season ten sanctioned races were held over courses properly laid out by surveyors appointed by the Racing Commission. These races were in all parts of the country, one of them being on San Francisco Bay, California. Applications were received from a number of other clubs for sanctioned races, but owing to some of the requirements not being complied with (usually through unfamilarity with the proper procedure) sanction could not be granted. The report is very gratifying and shows a strong desire on the part of various boating associations to run sanctioned races for titles that have some meaning.

Several minor changes were made in the rules. The principal one was for a stronger definition of an amateur, with the view to putting an end to racing for cash prizes.

The definition of an amateur adopted was as follows:

"No person who has followed the sea as a means of livelihood, or who has accepted remuneration for services in handling or serving on a yacht or power boat, or who shall after 1912 race for a cash prize, or who shall enter his boat to race for a cash prize, after 1913, or enter a race in which cash prizes are offered, except as provided for in section 3, rule 26, shall be considered an amateur."

The exception referred to covers the Bermuda Ocean Race, where a cash prize is now offered. There was considerable sentiment towards eliminating a cash prize here, also, but it was not crystalized at the meeting.

The officers elected for the ensuing year were: President, H. T. Koerner; secretary, M. M. Whitaker; treasurer, Geo. C. Krusen; measurer, H. J. Gielow. The Racing Committee for the year is composed of: Mr. Allen K. White, chairman; Mr. Reuben B. Clark, secretary; Mr. Frederick K. Lord. The results of the sanctioned races appear on page 46 with the other racing news.

How to Build the Swampscott Clipper Dory

By VICTOR SLOCUM

The second of a series of articles by Victor Slocum, son of Capt. Joshua Slocum, the single-handed navigator of the Spray, on the building of the simpler types of boats—craft that can be turned out by an amateur who has some knowledge of the use of tools

THE Swampscott dory is the direct outcome of the demand of the fishermen of Swampscott, Massachusetts, for a light, strong boat that could be easily and safely beached, yet with lines that would make her both swift under sail and easy under oars She is a direct descendant of the bank dory, and her evolution makes one of the most interesting chapters in the history of the fishing boat. But with that we have nothing to do here.

This boat, as she stands to-day, is called the "clipper dory," and is, without doubt, one of the ablest craft of her size (or inches); for in skilful hands she can weather the roughest sea conditions. Fitted with sails, centerboard, rudder and oars, she is a marine unit; small enough to be pulled with one pair of arms, and, at the same time, so light that the crew, in a pair of long boots, can leap out on the sand in making a landing and trundle his ship above high water mark on a couple of rollers. She is, therefore, to be recommended for those who want a small, able little boat, either for sail or power, that can be had at small cost and whose construction does not present too many difficulties to the amateur builder.

Her originator, Captain Brackett, whom I had the good fortune to meet a few days ago, kindly allowed me to overhaul his dory, take patterns from her frames, and gave me all the points necessary to enable one to reproduce her lines and general make-up. Readers of YACHTING may, therefore, get the full benefit of my interview with the designer, and the fine points of the real Swampscott model.

What material to get is the first thing to take up in building a boat. The dory which I am telling how to build here is 18 feet 11½ inches long; extreme beam 4 feet 8 inches; depth forward 30 inches and aft 28 inches.

For planking the Eastern dory builders use long boards that have been sawed out of the log with a natural sweep and with the bark left on both edges. If you are in a place where you can get your boards in this way, it will pay you to do so, as it will enable you to save about 50 per cent of the stock. There is considerable sheer (fore and aft profile curve) to a dory, and as the planks go on in rather wide strakes, the waste that would result from the use of boards jointed straight, as obtained from the ordinary lumber yard, will show after the spiling is taken. White pine is generally used for dory planking, but if this is not available white cedar is the stuff to get, and it must be in 20-foot length and ⅝-inch thick. Two of the boards must be very wide, about 13 inches or more, for the garboard strakes. The remaining six boards can run as narrow as 8 inches or 10 inches if they have sweep enough.

For bottom boards get one board 14 feet by 7 inches by ⅞ inch and two boards 12 feet by 7 inches by ⅞ inch.

Thwarts—Twenty running feet of 8-inch pine boards ⅞ inch thick. The bottom boards and thwarts can be made out of straight-jointed stuff.

Frames or Knees—Eight hackmatack knees, sided ¾ inch. Do not get the knees until paper patterns for them have been made from the plans, after which you can place them directly on the stock, so as to tell the shape needed.

Stem—A 5-foot piece of 2-inch oak plank; have the grain sweep as nearly as possible with the pattern.

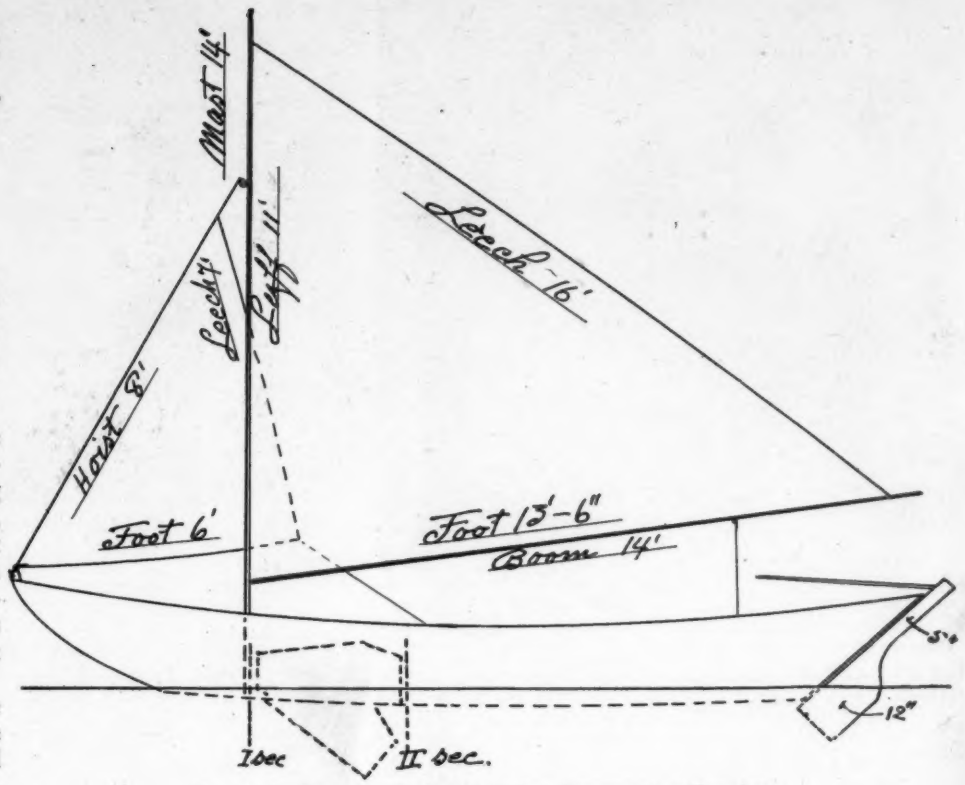


Fig. 1.—Profile and sail plan of 18-foot Swampscott sailing dory

Stern Post—An oak board 3 feet by 13 inches by ⅞ inch.

Rudder—An oak board 4 feet by 12 inches by ⅞ inch.

Center-board Box—Two pieces ⅞-inch pine board, 3 feet by 1 inch by 17 inches. Posts, oak, 16 inches by 2 inches by ⅞ inch.

Gunwales—Two pieces oak 20 feet by 2 inches by ⅞ inch.

Rises (strips for the thwarts to rest on)—Twenty running feet of pine, ½ inch by 2 inches.

Mast and boom can be worked out of some small pine or spruce poles to dimensions marked on the sail plan.

Sails can be made out of drilling on a sewing machine; 15 yards of 27-inch material will be enough. For roping, sheets and the jib halyards get 100 feet of small line about the size of a clothes line—in fact, a good-sized cotton clothes line will do.

Fastenings—Five pounds chisel-pointed boat nails, 2 pounds blunt-pointed boat nails, 2 pounds 10d common wire nails, 1 gross 1½-inch No. 10 screws and 1 gross 2-inch No. 10 screws. All fastenings *must* be galvanized.

For ground tackle the fishermen use a 5-pound anchor and 20 fathoms of small line for a warp.

Tools—The kit in the chapter on the Dory Skiff in the last issue of YACHTING is all that you need for the dory.

It is necessary to project, full size, the construction plan shown in Fig. 2 on a sheet of building paper stretched on the floor so that you can get correct paper patterns of the various parts from which to cut out these parts, the molds, etc. This process is described in the first article of this series on *Building a 10-Foot Dory Skiff* and need not be repeated here, or in subsequent installments of this series. Likewise details of various parts of the construction, such as beveling, lap straking, planking, etc., which are described there, are identical with this type of boat building practice, and will not be described again here.

Fig. 1 shows the general outboard profile of the dory, and from it one may gain an idea of the whole boat. Fig. 2 is, however, the one we must start to work from, because in it will be found a diagram of the bottom board (which is a sort of flat-keel in this case) and also the construction plan. The bottom board is put together the same as the one in the 10-foot tender in section 1, except that three boards are used instead of two, so that no further instructions are necessary on that point here.

Fig. 3 shows the layout of the stem, which after being marked out, full size, on heavy paper, can be used for a pattern. The bevel line is 1¾ inches from the face. The stem is fastened in place with 2-inch screws, through the bottom board.

Fig. 4 shows the shape of the stern post, or transom. The edges are beveled ½ inch from the "out" side, and it is fastened in place on the bottom board by means of a knee, shown

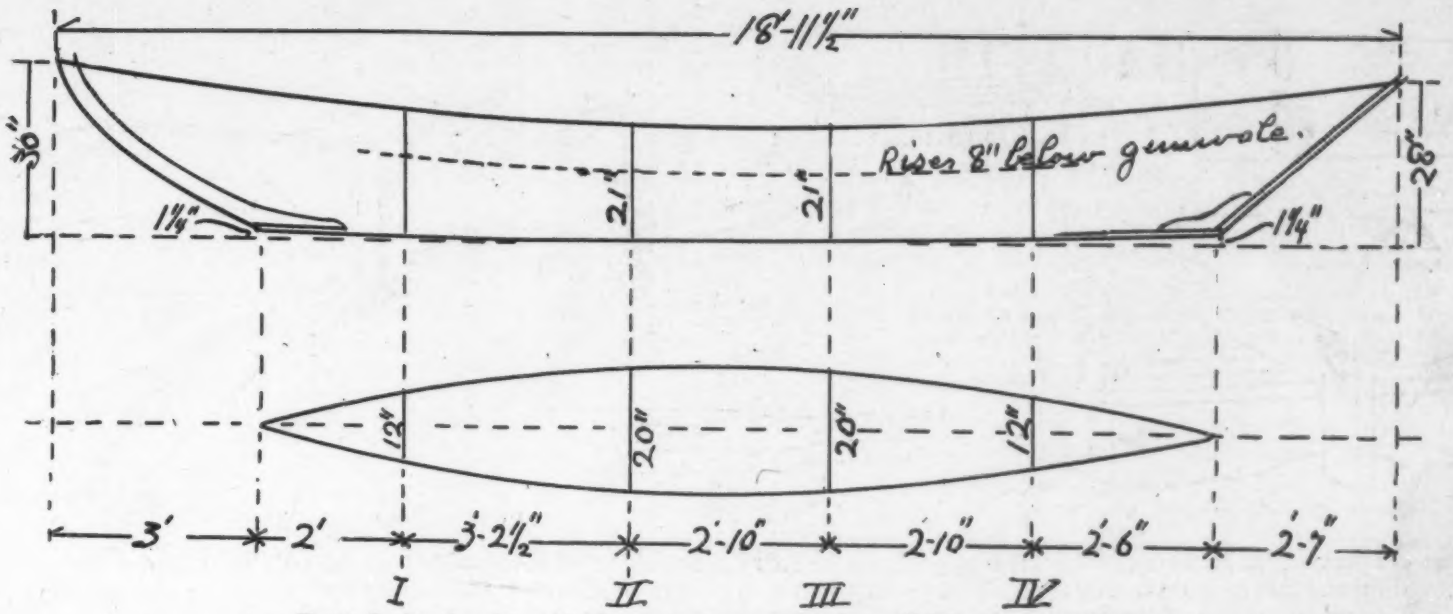


Fig 2.—Construction plan, with all necessary measurements from which to cut paper patterns

in the construction plan; the knee can be worked out of a bit of the stuff left from the stem.

Fig. 5 shows frames II and III, which are the two middle frames and are identical. Fig. 6 shows frame I. Fig. 7 is the IV frame. All the dimensions for laying down on paper and cutting out to the proper size are given on the drawing.

The edges of frames II and III are nearly square, and frames I and IV are beveled ⅜ of an inch. A suggestion of the bevels can be obtained from the bottom board itself as you are fastening the frame to it, as directed in the building of the ten-foot tender. (Section I.)

When the frames, as well as the stem and stern post, are all fastened to the bottom, we will turn our attention to the centerboard box. For the length of the box take the distance found between frames I and II. It ought to be about 3 feet 1 inch, but favor the actual measurement in preference to any theory, and make off two boards of the shape shown in Fig. 8. For posts make off two pieces of oak 16 inches by 2 inches by ⅞ of an inch. To make the box, fasten the side boards to the posts with lamp wicking and paint between the meeting surfaces to make watertight, as in Fig. 9. In making this sort of a box myself, I would first place the two posts on the bench, flatwise, and down the center of each stick I would embed a strip of the lamp-wicking in thick paint. Then I would lay one of the side boards on this, keeping the oak pieces flush with the top and ends of the side board, and tack it in place with some brads to hold it until I could put in the screw fastenings, 2 inches apart. Be sure to bore deep enough into the oak for the fastenings to prevent splitting and at the same time to get good holding ground.

Before driving in any fastenings that you are not sure of beforehand, always make a test in a block of wood with various sized drills or bits before going ahead and boring. The paint will "squash" out if you are doing good work, and if you find that a screw doesn't "hug up," and gets "killed" and goes round and round in the wood without drawing up when you try to make it do its work, take no chances with it but draw it out, plug the holes with pine, and try somewhere else, taking care not to bore so deep next time. A little experimenting in a block of wood will show what I mean.

After having driven enough screws in one side of the box, turn it over and repeat the operation on the other side and fasten a strip of ½-inch board over the top for a cap.

The ⅝-inch oak board for the centerboard is cut to fit about an inch clear of all points on the inside of the box. It is made to pivot on a ¾-inch wooden pin that is loose on the board itself, but is driven tightly through the sides of

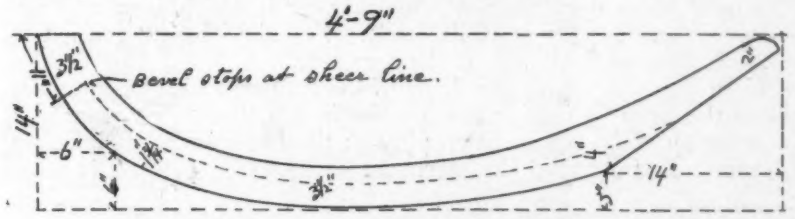


Fig. 3.—Stem piece, with measurements for making pattern

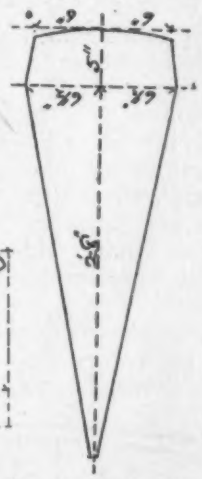


Fig. 4.—Stern post or transom

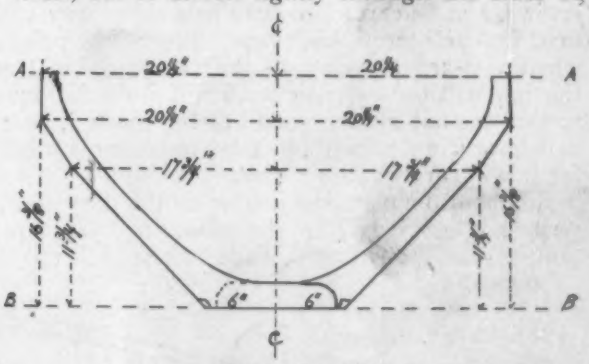


Fig. 6.—Frame No. I

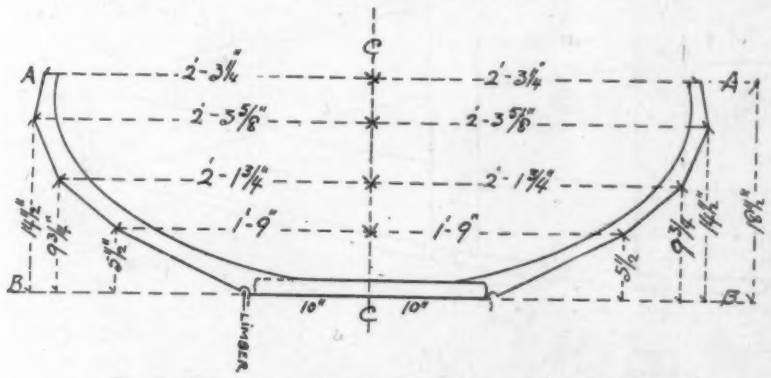


Fig. 5.—Frames at sections II and III (the two middle frames)

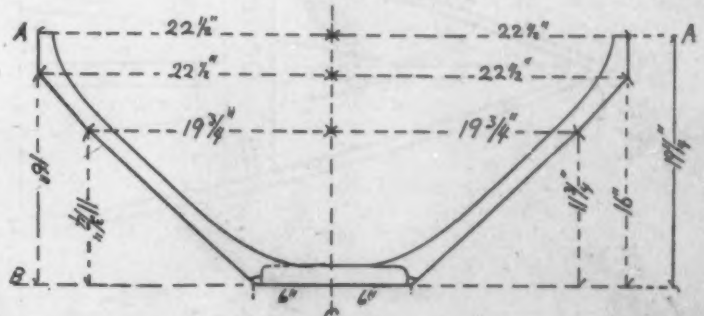


Fig. 7.—Frame No. IV

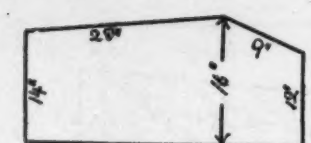


Fig. 8.—Measurements of centerboard trunk

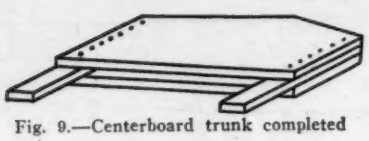


Fig. 9.—Centerboard trunk completed

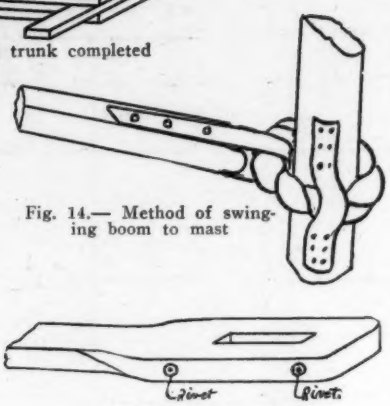


Fig. 14.— Method of swinging boom to mast

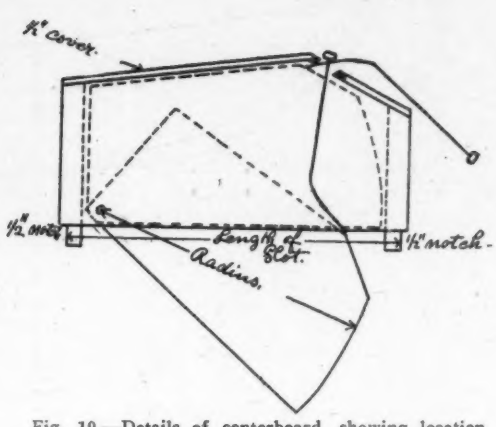


Fig. 10.—Details of centerboard, showing location of pivot pin

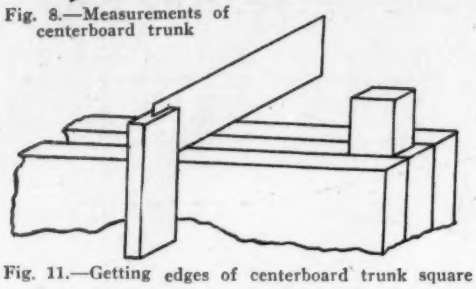


Fig. 11.—Getting edges of centerboard trunk square

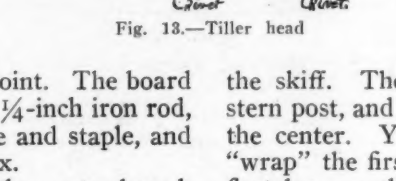


Fig. 13.—Tiller head

the box, to prevent the leakage of water at that point. The board is shoved up and down in the box by means of a ¼-inch iron rod, that is fastened to the top of the board by an eye and staple, and passes up through a hole in the top cap of the box.

Fig. 10 shows the location of the pivot pin in the center-board, and also shows the lifting rod, which is bent so as to hold the board, when it is up, by hanging over the box.

Notch the ends of the center-board posts ½ inch in from the ends of the box, as indicated in Fig. 10. The length of the center-board slot to be cut through the bottom of the boat is the exact distance between the shoulders, the width of the slot being ⅞ inch, which is just the thickness of the two posts that go down through it. A check on this is that the slot should extend on the midship line of the boat, to within ¾ inch at either end of frames I and II, and the box itself should jam down tightly between the two frames.

To cut the slot, line it off carefully on the inside; bore each end with ¾-inch bit, and saw out with the compass saw. The line for the fastenings is ½ inch from the edge of the slot, and the holes should be bored 3 inches apart, with the No. 6 bit.

When you are ready to fasten in the box, first make sure that the edges of the box are perfectly plane with each other with a try-square. (Fig. 11.) Having made sure of that point, embed a strip of lamp-wicking in thick paint on each side of the screw holes and across the ends of the slot, and tack the box in place with nails, from the outside. Fasten with the 2-inch, No. 10 screws, and be careful to bore in a short way with the No. 4 bit first, for each screw. The squashing of the paint out of the joint when you are drawing up the fastenings will again show that the job will be water-tight; but if no paint squeezes out, your screws are not getting good holding ground, and, as I have said in a preceding paragraph, take no chances with a loose screw, for it will surely cause a leak.

Go about the planking just as on the dory skiff, which was described in Section I, for the spiling and laps are all worked the same way. Remember that the boat is built upside down, as was the skiff. The garboard strake cuts up high on the stem and stern post, and is about 12 inches wide at the ends and 6 inches at the center. You will see the reason for it when you come to "wrap" the first board on in place. The meeting bevels for the first lap are the same, for the first two planks are in line, and have no knuckle between them. The plank ends forward are very narrow, running down to less than two inches, and at the after end they will be found to be about 2½ inches after making room for the top strake, which is 5 inches at each end, and 6 inches in the center. The method of fastening is just as described in the smaller boat.

The gunwales are tapered to 1 inch at each end. Cut the frames ⅞ inch below the upper line of the top strake and bend the gunwale around on the inside of the plank, and on the top of the frames. The inside of the frames are trimmed flush with the thickness of the gunwale.

For a mast step, get out a piece of spruce (or pine) 3 inches by 4 inches by 9 inches. Bore a 2-inch hole nearly through the 4-inch side and fasten the block in a fore-and-aft position, just forward of the No. I frame, with 2-inch screws, up through the bottom.

Rises are run along each side eight inches below the gunwale for the thwarts to rest on, just as in the smaller dory skiffs. They are 10 feet long. Three of the thwarts are cut in loose around frames II, III, and IV; but the mast thwart is firmly kneed with the center plumb over the hole in the mast step, and the thwart is bored with a 3-inch mast hole. (Fig. 12.)

Thole pins are used for row-locks, and are put through the gunwale itself; chafing pieces of leather or some other material would be an improvement, however, as it can be renewed and save wear on the gunwale itself. For the proper location of thole pins see Section I, on the dory skiff.

In Fig. 1 is shown the shape of the rudder, which has a tennon on the head to receive the mortise in the tiller. The rudder is hung on gudgeons and two pintals; the lower pintal is long and comes half way up the sternpost so as to be get-at-able when

Fig. 12.—Location of thwarts and row locks

you are trying to ship the rudder with the boat jumping about in a sea; the upper pintal is an ordinary one.

The best way to get these fittings is to buy an ordinary set and have the lower pintal lengthened by welding on a piece of iron rod.

The tiller is about 4 feet long and is out of a ⅞-inch oak board. The mortise to go over the rudder head must be riveted to keep it from splitting out under a strain. (Fig. 13.)

Fig. 1 gives the spar lengths. The mast is 2¾ inches diameter at the thwart, 2 inches at the head, and is shouldered off enough at the foot to fit loosely in the mast step. The boom is very light, being only 1¾ inches at the greatest diameter in the center of the spar, tapered to 1 inch at the outboard end and squared 1½ inches next to the mast. The boom swings to the mast on a leather strap and grommet—none of your store contraptions for a fisherman!

Fig. 14 shows how neatly it can be done; the leather strap is riveted over the end of the boom, passing through the grommet, which in turn encircles the mast. The grommet is held up in its proper position by a leather becket nailed on each side of the mast.

The sail is set standing, and is laced to both the mast and boom, and the little jib is set flying to a halyard rove through a block lashed to the fore side of the mast.

This little boat will be found tight, able, and will carry her sail well, with a couple of husky chaps sitting up to weather as ballast.

The Wanderings of Min-Mo

From the Jersey Coast in Dead of Winter to Her Subsequent Voyaging Under the Southern Cross Along the South American Coast

By T. C. MORRIS

PART I—FROM THE CHESAPEAKE TO SANDY HOOK IN FEBRUARY

IT was on the 27th of January, 1913, that I received orders from one of the American mercantile companies operating in Venezuela, to take command of the power yacht Min-mo, then in winter quarters at Easton, Maryland, and get her to New York in the shortest possible time, from which point she was to be shipped to Trinidad.

While an able little boat, the Min-mo was not just the craft one would have selected for an outside run up the coast in the dead of winter. She is 61 feet long over all, 13 feet beam, 4 feet 4 inches draft, and is driven by a 60-horsepower 4-cylinder engine. She has cabin accommodations for five persons, besides crew quarters, and is a fine little sea boat; her speed is about 10 miles an hour.

By dint of much hustling we were able to sail from Easton at 4 o'clock in the afternoon on the 29th, stopping at Oxford over night, where we filled our gasolene tanks. Early next morning we sailed for Chesapeake City, the weather being warm and pleasant. Just below Annapolis the engineers discovered that we should probably need new batteries, so we put into that place intending to get a set of Columbia Multiples, as that was the kind the boat had been using. The skipper took an electric car to Baltimore and began a still hunt for the batteries; but it happened they could not be had in any of the supply houses, so he got two dozen single cells and had them sent to Annapolis. When they (and the skipper) finally turned up, it was much too late to start, so we called it a day and turned in.

The following morning (Friday) we got under way early, expecting to make Chesapeake City easily and lock into the canal before dark; but we had another guess coming, as off the mouth of the Patapsco the engine began to heat badly and finally had to be stopped. Something seemed wrong with the circulation, so pump connections were overhauled and examined; but as nothing appeared wrong, we started up again. However, in a few minutes hot smells were floating about the engine room, and she had to be shut down for another period of half an hour while a second examination took place. .Still nothing seemed wrong, and no one knew what ailed her.

Finally, someone suggested that the pump dome be examined, and this being done a large chip was discovered jammed in the valve seat. After this was removed we had no more difficulty, but the short winter day was fast drawing to a close, so the skipper decided to put into Wharton Creek, as the southerly wind which had been blowing fresh all day was steadily increasing and rain was beginning to fall, an almost unfailing warning on the Chesapeake in winter of a sudden and violent change of weather. So

"WHILE AN ABLE LITTLE BOAT, MIN-MO WAS NOT JUST THE CRAFT FOR AN OUTSIDE RUN UP THE COAST IN THE DEAD OF WINTER"

we ran into this lovely little harbor, far enough up to be landlocked, and tied up to a wharf for the night.

Sure enough, in the midst of a sharp shower of rain there was a sudden squall of wind and an instant drop of temperature and the nor'wester was doing itself proud.

Next morning the Bay was frothy and a big sea was running, but the skipper thought he would take a chance, anyway, and try to make the canal, knowing that after 9 o'clock Sunday morning no boats would be locked in and, as it was turning colder every hour, there was a very good chance of the canal freezing over, in which case the little Min-Mo would probably *not* show herself under the Southern Cross for some weeks.

So everything being lashed fast on deck, out we went. It was extremely "dusty" outside, the shallow water causing the seas to run both hollow and steep. The little ship was put under as slow speed as possible; but even that was too much, and after a succession of big waves had broken clear over the deck and washed up over the pilot house, the skipper observed, "Well, I feel we've done all we can, so we'll go back;" to which the engineer replied, "Yes, and believe *me* it's plenty time to hunt our wharf again, for this is no place for a minister's son." So catching a "smooth" we turned and in a few minutes were at our friendly wharf, where we were perfectly contented to spend the rest of the day.

Sunday morning everything was icy and frozen stiff, except the water, and that would have been, only there was enough wind left to kick up a fair-sized ripple. So we got under way and in due season arrived at Chesapeake City. On the way up we passed two tows of barges and were pained to observe the ice

"WE PASSED A BIG FIVE-MASTER UNDER SHORTENED SAIL"

clinging to their bows, and it really began to look like old winter, sure enough. On the way up Back Creek we passed a tug which was aground, as the tide was exceptionally low on account of the nor'wester blowing the water out of the Bay.

On our arrival we went ashore to try to coax the superintendent to allow us to lock in, but there was nothing doing; so after wiring the office in Philadelphia of our arrival we sat around in the sun and smoked until 5 o'clock, when we were locked in and laid alongside one of the canal tugs all night. The mate thought the warmth of the tug's boilers would aid in keeping us warm, but on its being pointed out to him (a fact that escaped him in the dark) that the tug was laid up in winter quarters, he very sadly went below and huddled close to our only means of warmth, a kerosene stove, for the Min-Mo was never intended for winter cruising and had no heating facilities.

Monday morning came in misty and rainy, varied by snow squalls, but we got away about 8 o'clock and tried very hard not to exceed the canal speed limit of 4½ miles an hour. The only way of doing this, we found, was to run as slowly as we could until the next mile post showed up, then throw on neutral until the balance of the 12½ minutes had expired. Presently, in the deep cut, we overtook two lumber laden barges pulled by a tug, and we had to stop in order to let them keep out of our way, as there would be no chance to pass them for several miles. Finally, when the canal broadened out, we slipped past, and about 12.30 arrived in Delaware City.

Here we tied up to get grub and more gasolene. Also, a leak in the air whistle tank was located and a plumber's services requisitioned. The plumber, however, in strict accordance with the ethics of his profession, could not possibly do the job until tomorrow, so it was decided to wait over. The news that the Raritan Canal was closed, being confirmed, the skipper planned to go up outside from Cape May.

So on the following morning at 11 o'clock we backed away from the wharf. After signaling the lock-keeper to open the gate one of the wheel ropes suddenly gave way; fortunately, the yacht was still headed for the bank, so she was gently kicked ahead and again tied up while the damage was repaired. Next try, things worked alright, and after running up to the wharf and refilling the water tank we headed down the Delaware. It was still cold and raw, so about sundown we put into a little creek on the Jersey side, about 15 miles above Egg Island, where we laid very comfortably and forever thanked our stars for the cold weather, as we could easily imagine the millions of mosquitoes we would have entertained with our best blood had it been summer time.

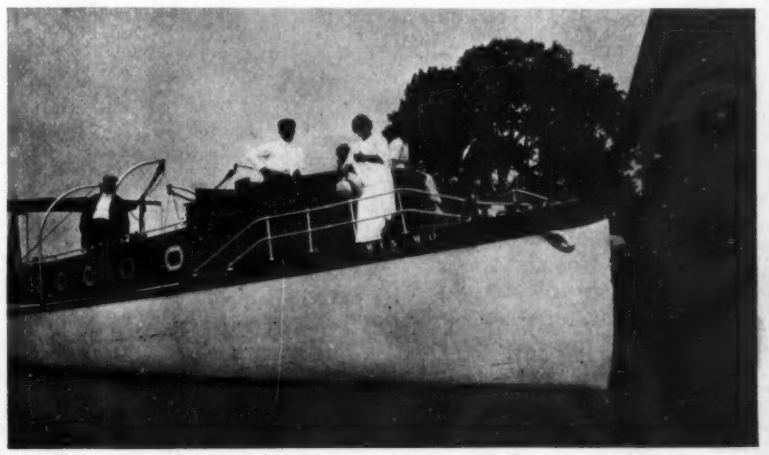
On February 5th, at high water, we started for Delaware Breakwater, running a S. W. by W. course. However, something was wrong, for we sighted Cape May on our port bow, whereas we should not have seen it at all. So we hauled right out across the Bay. This put us in the trough of the sea, which by this time was growing to real man's size, and we had a very uncomfortable time, as it was freezing on the shady side of the boat and the wheel house windows on the weather side soon were covered with frozen spray. However, the Breakwater at last showed up and we ran in and anchored off the signal station; and a rough berth we found it, as the N. W. wind has a clear sweep of at least five miles, and when the flood tide runs, one rolls something scandalous. And I *don't* like to be tumbled about when at anchor.

We were all sure the nor'wester *must* blow itself out by next day, but instead it freshened up so much that by 10 o'clock on Thursday we began to drag and had to let go the second anchor and 30 fathoms of chain; that held her, but when the tide changed she did everything to make life miserable for all on board. Still, there was nothing to do and nowhere else to go, so we stayed there until Friday afternoon, when, as the wind seemed dying with the sun, we got our anchors, and ran over to the wharf at Lewes, where the skipper went ashore to get more grub.

That night we all agreed that the long-continued nor'wester was done for, and that it would be a safe draw to get an early start for Sandy Hook in the morning; so on Saturday we were ready at the first sign of light. We ran out to the lightship and then hauled up on a course that should have brought us to the black buoy off Atlantic City. As there is considerable curve to the coast here we soon lost sight of land, but after about 3 hours' running, we saw what seemed to be the roofs of several houses just shining above the horizon. Upon inspection through the glass, however, the houses proved to be on barges being towed down the coast; so if we were on our proper course, this would have placed them several miles back in the Jersey pines.

We were still heading N. E., but, paying no further attention to the compass, which we were sure was "off," we headed in what we knew must be the right direction to pick up the coast and sighted, in due time, quite a good-sized town, which may have been Ocean View. Then we headed up the beach and after a couple of hours running saw another town. We all made guesses as to what it was, but in coming abreast saw a light-colored lighthouse with a black band, which my chart told me was Atlantic City and Absecon.

The wind had come on to blow again very fresh and at the distance we were off shore the sea was quite high and we were very uncomfortable, owing to the rough water and the cold. Under these conditions it was dangerous to start the gasolene stove, so we got a cold bite of beef and hard tack and hoped for better luck. My idea, when we started, was to arrive at Sandy



MIN-MO IN SUMMER TRIM

Hook before dark, as my only charts of the coast ended there, and none of us knew anything of New York Bay; but as we figured we had gone at least 20 miles out of our course and had to reduce speed running in to the shore again on account of the high, steep sea, I saw that we could never make the Hook unless we ran after dark; and as I was convinced by this time that the compass was way out, night sailing did not particularly appeal to me. On the Chesapeake, I knew the waters by heart and did not even have to uncover the "bally" compass; it was only when I got in strange waters that I needed it.

So we ran on, picking up the various places as we passed. Sundown caught us off Barnegat. A red blustery sunset it was, and we looked longingly into the inlet, but there was white water all inshore of us, and though I've no doubt there *is* a channel in, we could not see the least encouragement. I figured the tide would be low, anyway, from the week's nor'wester, so concluded to go on and trust to luck. However, we hauled closer to the beach, passing a big five-master under shortened sail slamming southward, and would have gone still further in but for night coming on.

It fell dark very soon after the sun disappeared; but we passed a couple of tows and, by reversing their courses and setting a star, managed to keep on. We evidently had the tide with us by this time and the wind a trifle abaft the beam, and by taking bearings I figured we were doing about 13 miles an hour. Presently we picked up a very long range of lights and supposed it to be Long Branch—and right there we came very near disaster.

I was in the cabin studying the chart and pricking off the distance to Sandy Hook, when I felt a sudden jar, and at the same time the gong clanged twice and something struck our starboard side a smart blow. I rushed into the wheel house and found the mate hanging half out a window, looking astern; the engineer was standing in the after-hatch, also looking aft. My eyes were full of lamp light and I could see nothing, and at first thought we had run between the masts of a sunken vessel, but the engineer insisted that we had run through a pound net and hurdled the rope; luckily for us we must have been rising on a sea, thus catching the top rope under our forefoot; had we dived under it, this story would probably never have been written, as no doubt the wire rope would have swept wheel house and everything else clear and the yacht would have foundered. There was no light of any kind shown, we were certainly all of a mile off shore and there was absolutely nothing to warn us, or anyone else, of danger. Well, we started the engine and found the wheel was clear, so, cursing the man who put the net there and hoping we had torn it up, we continued on our way.

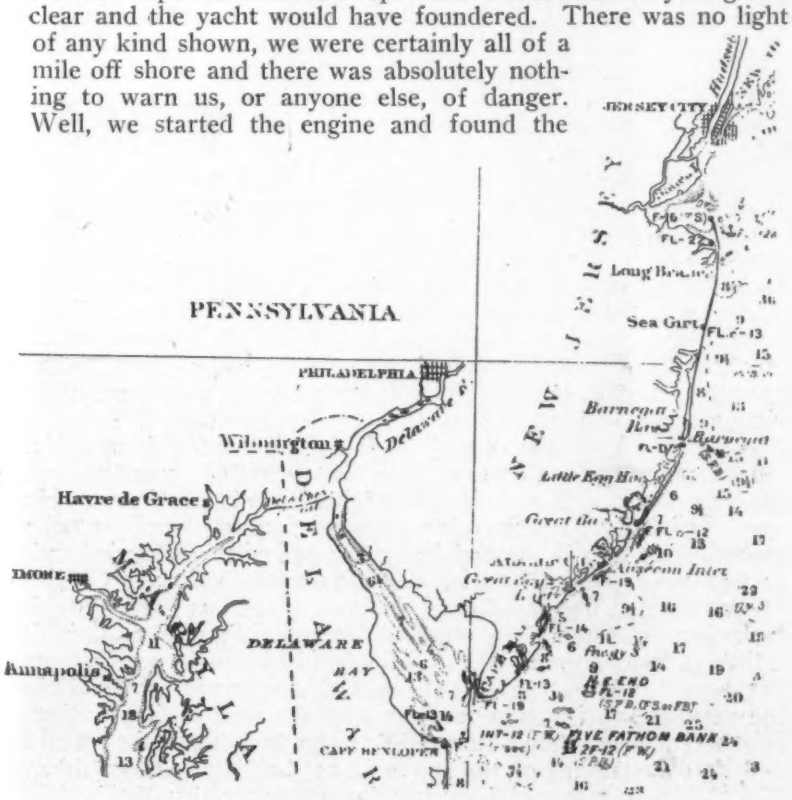


CHART OF THE UPPER CHESAPEAKE AND JERSEY COASTS

At 11.30 we turned into New York Bay, intending to anchor just inside the Hook, but as soon as we headed up I realized that we could not stay there, as a particularly nasty sea was running. In five minutes every one of our lights was washed out, and as it was freezing hard, we were a mass of ice forward in no time. Looking at my chart I saw that the wind was blowing directly into the Hook, but as the chart ended there I had no further guide.

Oh, yes! there were innumerable lights to be seen: gas buoys, fixed lights, range lights, flash lights—everything but vessels' lights—and after one attempt to relight our running lights during which I slipped across the icy deck and came within an inch of going overboard, I took a chance and ran along without any. The sea in this part of the Bay was extremely bad, short and hollow, and about every third wave washed clear across the deck, though the boat was under as slow speed as her engine was capable of, and I expected to see all the wheel house windows driven in.

There seemed but one thing to do, and that was to hold nor'west, as we were all quite sure there was land in *that* direction, anyhow, and we hoped to find something in the way of a lee and shoal water; but it must have been a most elusive shore, for neither our eyes nor the lead held out any hopes of a haven, so we began a slow circle, trying to find smooth water somewhere. Once we passed through the red center of a tower lighthouse and twice near the center of two white range lights, but none of these meant anything to us.

Finally, about 2.30 A. M. the engineer announced that his engine would shortly quit, as he'd been nursing it for an hour; so seeing another lighthouse, or it may have been the same one we had already circled, we headed for it and found two fathoms, so we let go an anchor and the engine died. Of course, we got in the trough of the sea and rolled so that we had to sit on the cabin floor and hold the little stove in place. We had our overcoats on and blankets wrapped around us, and so somehow got through a night that lingers in my mind as a horrible nightmare.

When day finally dawned, we found we were lying in a shoal near a reddish lighthouse, surrounded by oyster stakes and with high land, that we afterward discovered to be Staten Island, away off to windward of us; but to this day I don't know where we spent that wretched, cold, stormy night. We never sighted a vessel, either running or at anchor; and as we were knocking about the Bay from 11.30 to 2.30, I wonder where the dickens we were.

As soon as we could see, we got the balky engine going and headed for where we supposed (and hoped) the Raritan came out. We saw several large schooners being towed into and out of a corner of the Bay, so took a chance and ran over there. Finally, we discovered the Raritan and picked the buoys out of the ice; presently we opened up the Kill and, following the stream and dodging ice fields, at last found shelter from the wind and to our great relief saw the sign of the Perth Amboy Dry Dock Co., where the yacht was to be delivered and prepared for her future voyages under the Southern Cross. We were all worn out by the long, hard trip, loss of sleep and intense cold, and I never felt more relieved than when we threw our lines on the dock, and the mate reported, "All fast, sir."

After reporting my arrival by 'phone, we cooked the first real meal we had had since the night before leaving Delaware Breakwater, and having eaten it all hands turned in for a good sleep, it being just 10.30 A. M. when we tied up to the dock.

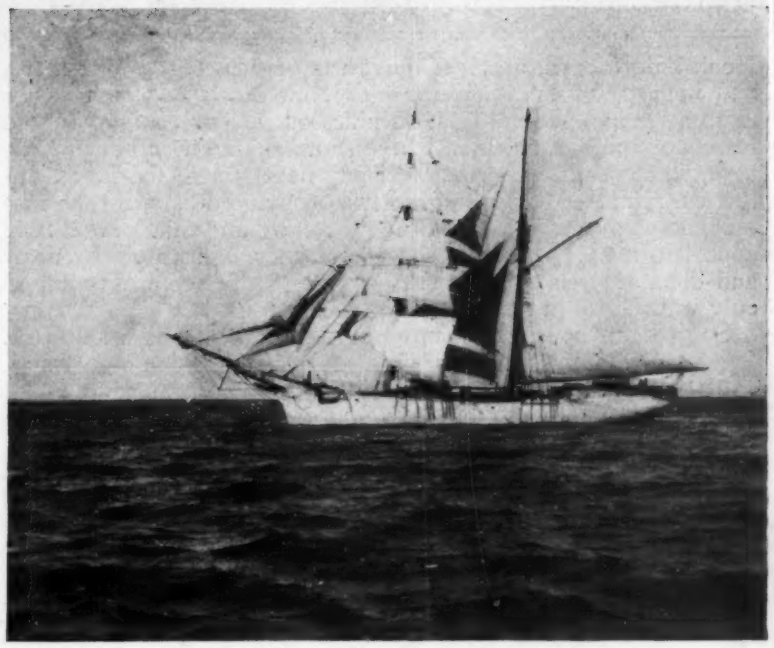
Next day I paid off the crew, who left at once for their homes in Oxford, Md., and turned the boat over to the Dry Dock people, while I also left to say good-by to those members of my family I had been unable to see before my hurried departure. From here we shipped Min-Mo to Venezuela on board the steamer Mayaro, and her subsequent voyages in Southern waters will be told in another paper—if this one escapes the editorial waste basket.

The next installment of the Min-Mo's log will tell of her trip to Venezuela on the deck of a steamer, and of her wanderings on the South American Coast and along the Orinoco Delta

The Mystery of the Brig Marie Celeste—Has It Been Solved?

By C. AUBREY VAUGHAN

A Critical Analysis of the Story Told by an Alleged Survivor. No Solution Yet Offered Convincing to a Seaman. A Plausible Suggestion as to a Possible Motive for the Apparent Abandonment.



BRIGANTINE OF THE TYPE OF THE MARIE CELESTE

THE Strand Magazine, in the August, 1913, number, called the attention of its readers to the old and baffling mystery of the abandonment of the American brig Marie Celeste, and invited its readers to submit solutions for consideration, in the anticipation that some explanation might be forthcoming of a practical and plausible character. At the same time it published ingenious conjectures by Sir A. Conan Doyle, Mr. Arthur Morrison, Mr. Barry Pain, Mr. Morley Roberts and Mr. Horace Annesley Vachell.

In the December, 1913, issue, the same magazine publishes what purports to be the true solution of the mystery of the Marie Celeste in the form of a diary of a man who claimed to be a survivor of the vessel, one Abel Fosdyk, who, according to his own statement, was cook and steward of the brig at the time. The known facts previous to the finding of this diary are very meagre and have baffled all attempts to render an explanation of the tragedy that would satisfy those familiar with the sea and its ways.

The official documents of the case as published by The Strand, consist of the report of the United States Consul at Gibraltar to the owners, as follows: "Gibraltar, January 2, 1873. The American brig Marie Celeste, of New York, was brought into this port by the British bark Dei Gratia. The Marie Celeste was picked up on high seas on December 5th, abandoned. Brig in perfect condition but was taken possession of by Admiralty Court as a derelict. Fate of crew unknown." Also of documents in the archives of the Department of State: Document 136, from U. S. Consul Johnson, dated January 7, 1873, "Result of analysis, adverse to blood existing on sword and woodwork belonging to the brig Marie Celeste," Document 137, from the same, dated January 20, 1873; "Principal owner of brig Marie Celeste arrived from New York to claim brig from Admiralty Court. Nothing heard of missing crew. Chronometer and ship's papers, not to be found on board the brig;" Document 138, "Brig Marie Celeste restored to her original owner February 12, 1873;" and Document 139, "Brig Marie Celeste cleared for Naples under command of Captain John Hutchins, sent out by owner from New York for the purpose. Forwarded to Mrs. Bilson, of New York, effects of Henry Bilson missing, mate of brig Marie Celeste. The brig's last voyage."

The full story, as far as the known facts go, is as follows: The brig Marie Celeste, which sailed from New York early in November, 1872, for Genoa, was overhauled at sea by the British bark Dei Gratia on December 5, 1872; the brig under full sail was evidently not under command as the vessel yawed about, subject to the vagaries of the light wind that was blowing, and no response was made to signals made from the bark. As the sea was smooth, the officers of the Dei Gratia had no difficulty in boarding the Marie Celeste, where they found everything in perfect order, the hull sound, everything all right aloft, but not a soul on board. The vessel had been hurriedly abandoned by all hands. A thorough search developed such an extraordinary and mysterious condition of affairs that when the facts became generally known to the maritime world it was with common consent called the "Greatest Mystery of the Sea."

The brig's boats were all in place. In the crew's quarters, pans on the stove contained a breakfast ready cooked but untouched. In the mate's room aft, two watches were lying on a table. In the cabin they found a sewing machine with a thimble lying on its side on a corner of the machine, also a child's pinafore, partly completed, the sewing in of a sleeve being half finished. The cabin table was laid for four people who had left before the meal. Breakfast, consisting of oatmeal, coffee, bacon and eggs, was half finished. The child's porridge had been nearly all eaten. At the captain's place were two halves of a hard-boiled egg in the shell. A tall, narrow bottle filled with cough medicine stood uncorked at the very edge of the table, by the woman's place. The cork lay on the cloth alongside.

That the tragedy was a very recent one these things indicated, for a very slight motion of the vessel in a seaway would have dislodged these various articles. The chronometer and ship's papers were missing; the log-book was found in the mate's room, entered up only to November 24, some ten days before. As Gibraltar, to which port the Dei Gratia was bound, was only some 300 miles distant, a prize crew was put on board the Marie Celeste, which, convoyed by the Dei Gratia, duly arrived at Gibraltar on January 2, 1873, where she was handed over to the British Admiralty Court for the adjudication of the salvage claim of the Dei Gratia.

The foregoing covers all the essential facts known up to the introduction by the Strand Magazine, of what purports to be the diary of this Abel Fosdyk (since dead), and there can be no question as to the good faith of all parties connected with the finding and publication of this diary. A careful persual of this document discloses some exceptional features, which call for careful consideration as a whole and in part before coming to any conclusion as to whether it is a true solution of the mystery or merely a fake, left behind by a dying man to gain some notoriety after he had left this world.

A precis of the so-called diary is sufficient for this analysis. Abel Fosdyk states that the Mary Celeste sailed from the port of New York with a cargo of spirits, bound for Genoa. He speaks of her as a brigantine of some 600 tons and that she looked as new as if she had just come out of the *maker's* hand. It was not only the *exterior* that was good, he says. (Italics are our own.) The vessel carried a crew of thirteen men, all told, including the captain and mate. The captain's wife and child, a little girl, accompanied him. The detail of the voyage presents nothing of interest (beyond the fact that it is not expressed in the vernacular of a man familiar with the sea) until the diary relates that the captain's little girl was seen one day by the captain and Fosdyk standing on the bowsprit, not holding on to anything. The child was removed from her dangerous position by Fosdyk. The result of this was that what he calls a "little barricade" was

fitted up at the bowsprit by the carpenter for the child to sit in in fine weather. He gives this description of it:

"The groundwork was, I think, an old door or top of a trestle table. It had another similar one screwed on to it underneath. On three sides, that is, one long side and two short, a kind of rough balustrade was made about the height of an ordinary table, with a rail along the top. This was hoisted on the bows and rested at the same time on two sides of the ship and on the bowsprit. In order to make the gap safe between the sides and the ship, a slanting rail was put on each side. Further a step was put below, and on the top a small barrel was placed for a seat. This platform was always called "Baby's quarter deck."

The diary goes on to say that the captain began to show signs of mental derangement, due to exhaustion brought on by a long spell of bad weather, and it refers to him in the following commendatory terms: "He had been a good master to me and I, like all the others, had watched him with awe, amounting to reverence and affection, *managing the boat* and protecting our lives with such *masterful precision* that it made him appear to us *to be something above the ordinary mortal;* and now his mind was undoubtedly unhinged for a time." A dispute arises between the captain and the mate as to a man's swimming ability when fully clothed, which results in the captain insisting that he can swim completely around the vessel, fully clad, in five minutes' time. Instead of taking his breakfast, which was ready, the captain insists upon an immediate test. He is persuaded to change into an old suit of clothes the mate was wearing, and sent his clothes by Abel Fosdyk to enable the mate to make the change. His watch was in the pocket of the waistcoat and dropped out when Fosdyk reached the mate's room, where it was picked up and placed on the table alongside of the mate's watch. The captain's wife insists that two men accompany the captain in his swim. The captain here sends one of the men below for his watch in order to take his time. The man, unable to find the captain's watch, appears with the brig's chronometer, which the captain's wife takes charge of. They all go forward to the forecastle head, where the "baby's quarter deck" had been built.

THE BRITISH BARK DEI GRATIA HOVE TO AND BOARDED THE MARIE CELESTE

The diary goes on: "Grumbling somewhat, I did not catch what he said; he went over the side and before he actually started, I should like to describe as carefully as I can how every one was placed. Fred was at the wheel, or rather standing near it. We had taken in a little sail and heaved to. About *halfway* up the ship, on the starboard side, was Ginger, lighting a pipe. In the water were Joe and young Bill waiting for the captain. Darky and Robin were below, I did not at the moment know why, but soon saw they were taking off some of their things to have a swim also. Mrs. Briggs sat on the barrel on the baby's quarter deck, looking the picture of misery, and baby was leaning over the rail of the same. The mate stood with his left foot on the bulwarks and his left hand holding the rigging, whilst his right foot was on the rail by baby's arm. He was leaning with his elbow on his knee and, I think, speaking to baby. The elder Bill and myself were both on baby's quarter deck. Clark was standing on the deck with his arms leaning on the quarter deck and the boy was standing beside him. It was arranged baby should say 'go.' The captain leaned over, taking the jib-boom chains in his hand, hung from them. 'Go,' said baby, and almost directly after Robin and Darky got over the side and plunged in. They kept close up the bows, so as to help the captain out, I suppose. I do not know if Mrs. Briggs had asked them to do this. The captain did not have the slightest difficulty in getting along.

"We followed him with our eyes till he got to the stern, where he turned, and Ginger, who had followed him on the deck, called out, 'He's around the corner,' and soon after when he had turned to come up on the port side, came running, with Fred, to see the finish. *We were all* now, as far as I can tell, in the bows *standing* on *baby's quarter deck,* when suddenly a most unearthly shriek, which I am sure was young Bill's voice, rent the air. We all leaned at once to the port side—and, without the slightest shadow of warning, found ourselves in the water."

The diary goes on to say that after a severe under water struggle with a drowning comrade, Fosdyk came to the surface and his first thought was how he should get back into the ship. "Get back, but how? For the first time now I took stock of the situation. I had fallen on the port side of the bow and was at the moment about thirty yards in *front of the bowsprit* and about ten yards out on the starboard side. The platform we had so long known as baby's quarter deck was dangling by one of its ends to the bowsprit and Big Bill was hanging by both hands to the other end of it; *his feet were a little clear of the water.* What suprises me most was that not another soul was to be seen. Had they all got back or where were they? 'Bill,' I cried, what has happened? His answer was: 'You fool, there's a shark between the captain and the ship.'

"Shark is not a pleasant word to hear when you are in the water. Feebly I screamed out 'Help, help,' where there was no help. Just then the platform came down on the top of Bill."

This covers all the essential facts of the narrative. Fosdyk and Bill cling to the platform; the latter who was injured soon dies. Fosdyk sees the captain's head some distance off, when the drift of the vessel cuts off his view and he does not see him again. Fosdyk says: "For a long while so still was the air, the relative positions of the ship and the raft remained the same. The current took the ship in the same direction that it took us, but gradually we separated. The ship being larger, went, I suppose, *slower or faster, I cannot say which.*" Fosdyk further says from where he was he could see the whole starboard side of the ship, and was horrified to find no rope or chain hanging down so that even if he were to get alongside he did not see how he could get on board. Fosdyk becomes delirious and the raft drifts ashore on the northwest coast of Africa, when he is rescued and restored to health.

There is no question that the writer of this diary, from which the foregoing essential extracts have been taken, was not familiar with the sea. The language used is the first indication of this. On joining he says of the Marie Celeste, that she looked as new as if she had just come out of the *makers'* hands. A sailor would say *builders.* He refers to the outside of the hull as the exterior; and of the captain as protecting their lives with such *masterful* precision, that he appeared to his men to be more than an ordinary mortal, and of his *managing* the boat, where a seaman would say *handling.*

The first real suspicion that suggests itself to the reader is in the placing of what he calls *"Baby's quarter deck"* in the bows of

the vessel, alongside the knight heads. The dimensions of a ship's door, which formed the floor of the structure, would be 6 feet by 2 feet 6 inches, and with the railing would stand about 3 feet high. Placed where designated, it would be in the way of the jib sheets. It would have to be very strongly constructed and bolted down, or it would be carried away by the seas in the first heavy weather encountered. A merchant brig of 600 tons would have a beam of about 30 feet, full built forward to carry as much cargo as possible, so that the ends of such a structure would not project on either side of the bow, but would rest flat on the deck of the forecastle head. A more dangerous playground for a child could not possibly be selected. Another discrepancy is that he says the brigantine was a vessel of 600 tons. In those days vessels of that rig very seldom ran over 350 tons. It is probable that the vessel was a brigantine or hermaphrodite brig, as American full-rigged brigs were very scarce even at that date, and the former rigs were usually called by the generic name of brig.

Fosdyk is at some pains to describe accurately how every one was placed just before the disaster occurred. He says, "The mate stood with his left foot on the bulwarks, and his *left hand holding the rigging,* whilst his right foot was on the rail by baby's arm." What rigging was the mate holding by when standing in the bows of the ship with one foot on the bulwarks? The brig was hove to, in order to let the captain take the swim. A man named White was at the wheel, *where it was absolutely essential for him to remain* with the captain and the men in the water. That there was a fair breeze is evident, for Fosdyk states sail was reduced before the vessel was hove to. Why all hands (including the man at the wheel) should crowd together in the bows on "baby's quarter deck" is not clear, unless for the purpose of sliding all of them off into the mater *en masse* at the proper time. The report of the bark that picked the vessel up also states that all sail was set when she was found.

Fosdyk says the captain's wife and daughter were seated on this structure, which would be quite sufficient to prevent any invasion on the part of the men. Besides the overhang of the bows would prevent any chance of seeing what might be taking place in the water under the bows. The places of vantage would be the martingale, bowsprit end and jib-boom and it is to these places Jack would naturally go. However, the diary states that all hands are suddenly thrown into the water, the baby's quarter deck with them. How a disaster of this kind could occur is very hard to understand, even if the quarter deck had been on wheels; and Fosdyk very wisely does not attempt to explain. There is no rolling of the hull, as the evidence of the medicine bottle and cork standing upright on the table's edge and the two halves of a hard-boiled egg, also lying on the table in the cabin proves, for a very slight roll of the hull would have sent them flying. Still a narrow structure 6 feet by 2 feet 6 inches, with rails on the side towards the bows and at each end, suddenly acquires a tremendous lateral impulse, and, weighted as it is by six men, a woman and a child, moves with such velocity that they have not even the opportunity to leap backwards (as they were free to do) and escape. Eight people standing in such a space would be a bit crowded and besides would not be in position to see what might be going on under the bows. However, they are all there; the man who should have been at the wheel included.

The missing chronometer is accounted for, as the captain's wife takes it with her. The missing ship's papers, for which search was made, the diary does not refer to. They would be kept in a metal case and consist of a certificate of registery; bill of health; general clearance; clearing manifest; bills of lading for the cargo and copy of charter party. These missing papers have a vital bearing.

Now that all hands are in the water, why stay there? The vessel carried a full cargo of spirits and the fore and main chains should have been close enough for a man in the water to grasp and haul himself up. Fosdyk has the additional advantage of a handy, navigable raft easily towed or pushed through the water by a swimmer across the short distance separating it from the brig. There can be no question but that it was sufficiently buoyant for him to stand upright on it and, once alongside, to get out by the chains would be an easy matter, or by the bob-stay chains forward. The freeboard of the brig as given in the diary would apply to a vessel flying light in ballast but not to a vessel fully loaded with a heavy cargo. Fosdyk states he tried to paddle the raft, and found he could make no progress; very true, but a swimmer would find no difficulty in propelling a light structure a short distance.

One thing more tends to cast doubt on the story. Fosdyk produces with his diary a photograph of "baby," which he says was presented to him early in the voyage by the captain's wife. How he happened to save this photograph at the time of the alleged catastrophe is not told, and it is extremely unlikely that he was carrying it around with him on shipboard. Consider also Fosdyk's statement, "The platform we had so long known as baby's quarter deck, was dangling by one of its ends to the bowsprit, and Big Bill was hanging by both hands to the other end of it; his feet were a little clear of the water." This would make the brig show at least 20 feet of the side out of the water at the bows. These figures are hard to reconcile, when it is considered the vessel in question is a small craft and loaded deep with a heavy cargo.

No! This statement does not carry conviction to anyone who has followed the sea, and smacks very much of a cooked-up yarn to suit the few known facts of the case. It looks as if the veil of mystery behind which the fate of the Marie Celeste's crew lies hidden will never be raised by a statement that will satisfy absolutely. And in advancing a hypothetical explanation, the known facts must be taken into consideration and theories made to square them, without any undue call being made upon one's credulity or common sense.

The mystery of the Marie Celeste is one that has keenly interested every one connected with maritime affairs, and in advancing a possible and reasonable solution the daily routine of the life of the crew must be taken into consideration, particularly in relation to their duties and the ordinary accidents of the sea. The diary of Abel Fosdyk as given by The Strand Magazine necessitates a glance at "Merchant Jack" to see what kind of a man he is, and the character of the school in which he is developed and trained. Fosdyk gives a picture of a body of trained A. B.'s committing breaches of discipline, and clustered forward in the bows of the brig in a tightly compact mass, then sliding overboard from a motionless vessel in a perfectly smooth sea, and drowning like so many puppies in a tub.

The crew of the Marie Celeste would be divided into two watches, the mate's and the second mate's; the latter in this case would be an experienced seaman. The port watch is always the mate's, the starboard watch the second mate's. The watches are changed every four hours. Both watches may be on deck at the same time if any emergency arises that calls for all hands to deal with. So Jack must always be ready, whether it is his watch on deck or his watch below, to answer the call for "all hands," with the knowledge that a peril of some kind menaces the ship and her company; and upon the individual resourcefulness, courage and ability of the crew their safety depends.

The Marie Celeste sailed from New York in the fall of the year, and from Abel Fosdyk's story encountered very heavy weather the first part of the voyage, but was so well handled that she sustained no damage. I have crossed the North Atlantic in square riggers during the autumn months and know what a succession of heavy gales means at that season of the year. The voyage I have in mind was at a time when all vessels reported terrific weather on arrival. We had had a succession of heavy gales and high seas, the weather was cold and squally with rain and sleet. The rigging being heavily coated with ice and the decks slippery with frozen spray and rain, which with the heavy rolling and pitching of the ship made it almost impossible to keep one's feet, at one time or another nearly every one had gone rolling down into the lee scuppers.

Yet it is a body of men trained in the perils and hardships of the sea that Abel Fosdyk, in his diary, slides in a body from the bows of a motionless brig to drown in smooth water.

In arriving at any reasonable solution of the Marie Celeste mystery, the daily routine of the life of the crew must be taken into consideration, particularly in relation to their duties and the ordinary chances of the sea. By analysis and elimination, the following solution may be suggested:

First, the tragedy must have been of exceedingly short duration. No untoward happening was noted in the log book, though it will be remembered that it was not written up to within ten days of the finding of the brig. The crew had not been reduced in number by any cause prior to their annihilation as a body. This could not have been brought about by an attempted rescue of some one falling overboard, or by any ordinary accident of the sea, for the reason that the tragedy happened in fine weather, on a perfectly smooth sea, and not long before the boarding party from the bark Dei Gratia found the brig entirely deserted.

Everything points to the commission of a crime and by one individual—in all probability one of the officers. With the commission of every crime is always associated a motive. In this case the motive may be assumed to have been the salvage of the brig, from the careful steps taken to establish proof of her abandonment by the captain and crew. It is an unvarying rule of the sea, in all cases of abandonment, that the ship's papers, chronometer and log book are the captain's charge. Absence of these various things, particularly the ship's papers, are proof of abandonment and they are the first things searched for by any party boarding a derelict. The cuts discovered in the bows of the brig, which have caused so much speculation, might easily be a further proof of the salvage claim motive, and at the same time supply the clue to the last act of this strange mystery.

The salving of a valuable derelict is the dream of every merchant Jack, for in no other way can he expect to make a large sum of money in a brief space of time; it is one of the lotteries of the sea to the sailor. In making a study of this case on the hypothesis that one individual planned to salve the brig by destroying the crew, and then bringing the vessel into the nearest port single handed, without in any way arousing the suspicion of the authorities, the problem must be approached from his standpoint.

He must, first, provide a means by which all hands but himself may be annihilated without undue risk. He would, naturally, think of a swiftly acting and deadly poison. Taylor's Medical Jurisprudence mentions two only, anhydrous prussic acid and nicotina. As the first named would act instantaneously, the second, nicotina, would be his choice, for the reason that it is sufficiently delayed in its action for all hands to take it in their breakfast coffee before suspicion would be aroused. His next idea would be to wait until the vessel was within 250 miles or so of some port before acting, when getting the brig in single handed would not present many difficulties, especially in the case of a small vessel like the Marie Celeste.

On all small vessels, during fine weather, both watches breakfast at the same hour, 7.30 A. M. It would be easy for the would-be criminal to choose a day when his watch on deck would be from 4 A. M. to 8 A. M. Then to send the cook from the galley on a trumped-up errand, in order to provide an opportunity to poison the coffee prepared for the cabin and the crew, would be a simple matter. The man at the wheel could be permitted to go forward for a cup of coffee with his mates, while the officer stood by the wheel for a few minutes; it would be a special favor which Jack would appreciate.

Having thus provided for the destruction of all on board, the next problem would be to account for their disappearance in some way that would not arouse suspicion, and at the same time would place the survivor in sole control of a valuable "derelict."

The most natural and plausible story to invent would be that of a collision between the Marie Celeste and some unknown vessel. It would not require much ingenuity to explain that, when the vessels collided in the darkness, a panic seized the crew of the brig and the cry was raised that she was sinking; in consequence of which the captain gave orders for all hands to abandon ship, and, taking the ship's papers and chronometer, he, with all hands escaped into the other vessel, while the two were still foul.

He could account for his presence on the brig by stating that he had been struck on the head by something falling from aloft, and when he recovered conciousness had found himself alone. He would explain that, as it was a very dark night, misty, with fine rain falling and a strong breeze blowing, the colliding vessel had run out of sight.

He must, however, give the brig the appearance of having been in a collision. While disposing of the bodies, which is his first step, he removes the captain's watch from his body and places it alongside the mate's (or his own) watch on a table in the mate's quarters. Then he disposes of the ship's papers and chronometer over the side, for the captain would not abandon the vessel without taking them with him. The absence of the papers and chronometer he counts upon as very convincing proof of his story.

His next step must necessarily be to give the vessel the appearance of having been in a collision. It is his intention, by cutting some of the back stays, to wreck the vessel aloft. Sail being set, the wind would coöperate in bringing down the top hamper, and with a little judicious hacking of the fore and main shrouds the rigging would soon be in the desired condition.

But the outside of the hull must be attended to, also, to show where the vessels had hung and ground together. So, before upsetting things on board below, he decides to first cut up the outside of the hull and begins with the carpenter's ax on the bows, balancing himself on the bowsprit shrouds or martingale chains—a very precarious footing. Taking the ax with both hands, lulled into false security by the easy, quiet motion of the hull, he begins his work of destruction. He has made several cuts (these cuts found in the bows of the brig have so far baffled explanation), when the vessel lurches, he loses his balance and with one despairing cry vanishes under the bows. The brig is now left at the mercy of wind and sea.

It will, of course, be seen that the non-appearance of the unknown colliding vessel, on which the captain and crew are supposed to have escaped, would not discredit the story, as she would be thought to have foundered shortly after, with all hands, being too severely damaged to keep afloat. However, the perpetrator of the crime went to his last account before he could carry his plan to completion, leaving behind a sea mystery of the first magnitude for the maritime world to puzzle over for all time.

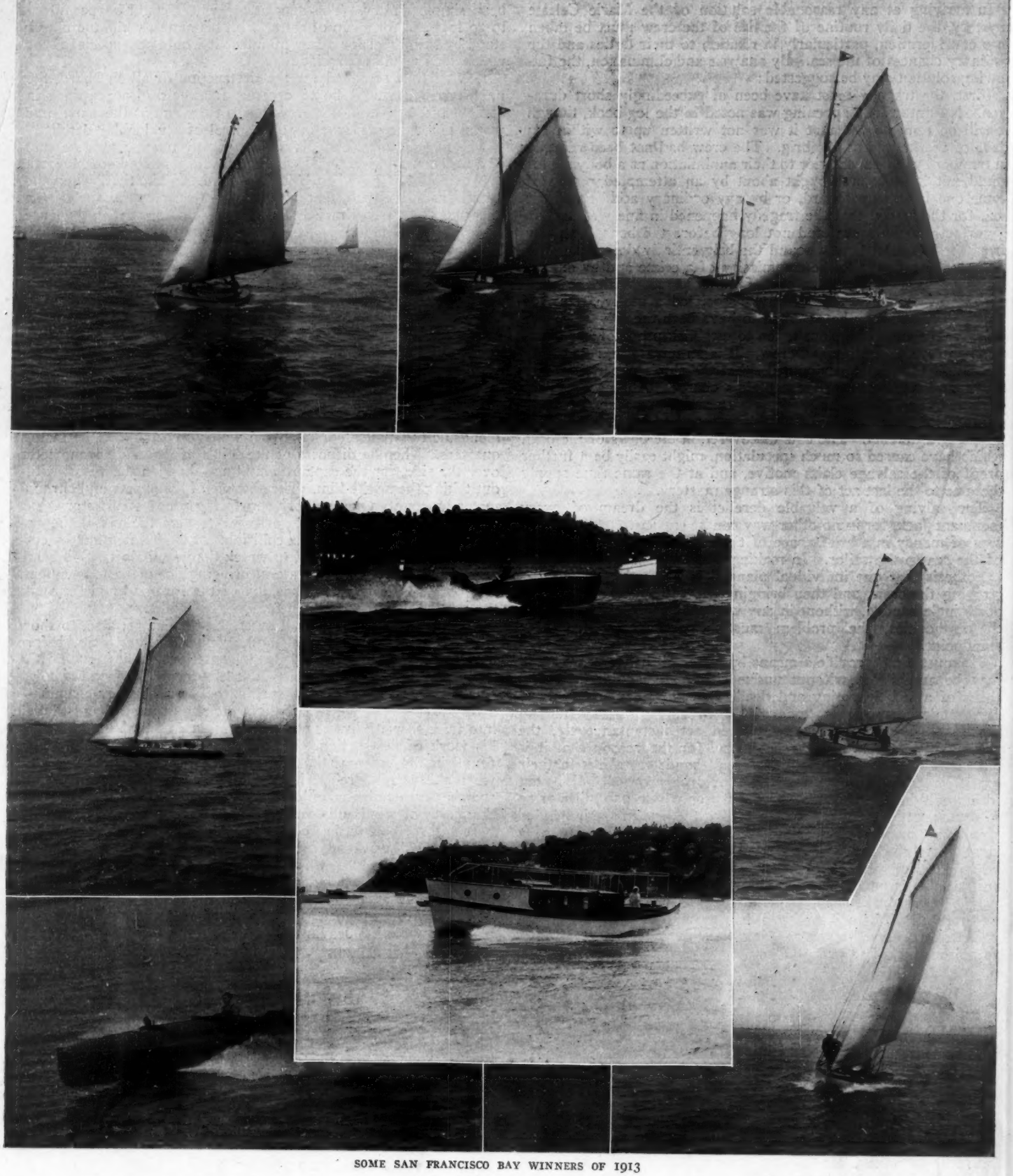
Promoting the R Class

THE Indian Harbor Yacht Club has just announced that it will offer a valuable trophy for annual interclub matches, for boats built in the "R" Class under the Universal Rule. This announcement coupled with the fact that the Corinthian Yacht Club of Marblehead has also offered a trophy for the same class, and the Chicago Yacht Club has signified its intention of putting up a trophy for competition between the East and West, bids fair to make Class "R" the standard of interclub and intercity racing for the coming season.

The conditions of the trophy offered by the Corinthian Yacht Club of Marblehead for this class are similar to those of the Lipton Cup. It is for Yacht Racing Association competition and must be won three years by the same owner to become his property. But the Indian Harbor Yacht Club's trophy will assume more of an international character, as all boats rating in this class under the universal rule will be eligible, thus allowing Canadian yachts to compete.

The expense of building these boats is considerably less than half the cost of the "P" Class boats and the expense of running them would be proportionately smaller. Hence it is thought that for these reasons and on account of their efficiency a great many will be built.

Four members of the Indian Harbor Yacht Club have signified their intention of building, and several boats are talked of in the Corinthian Yacht Club.



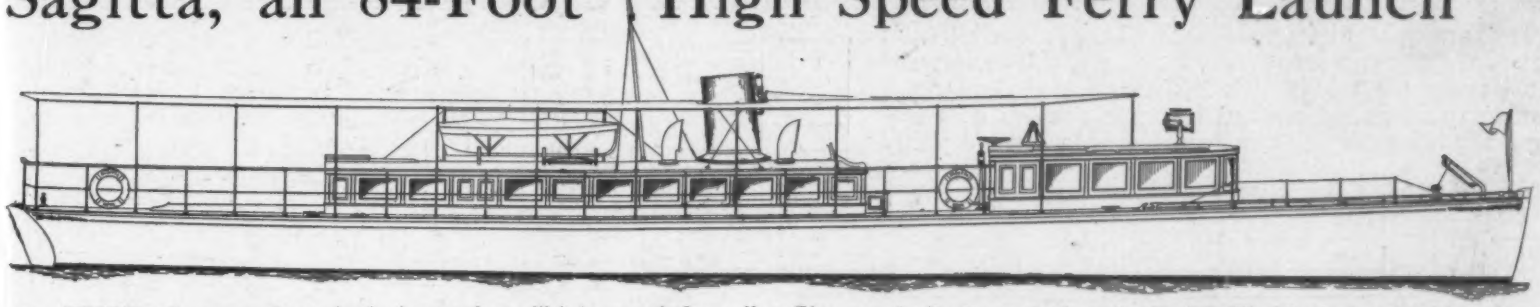
SOME SAN FRANCISCO BAY WINNERS OF 1913

RUBY, SAN FRANCISCO YACHT CLUB
OREADES, EUREKA YACHT CLUB
SPEED CHAMPION, SUTTER BASIN

PRESTO
SCAMP, SACRAMENTO MOTOR BOAT CLUB
ROB ROY, OAKLAND YACHT CLUB

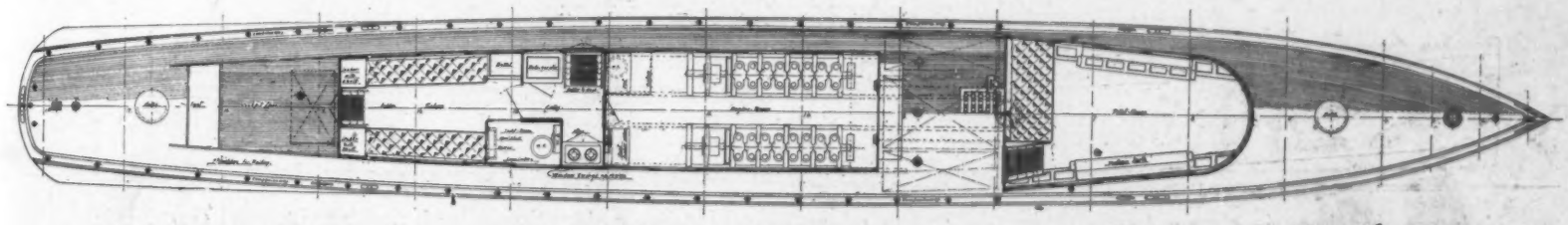
YANKEE
ALERT, OAKLAND YACHT CLUB
MONSOON, SAN FRANCISCO YACHT CLUB

Sagitta, an 84-Foot High Speed Ferry Launch



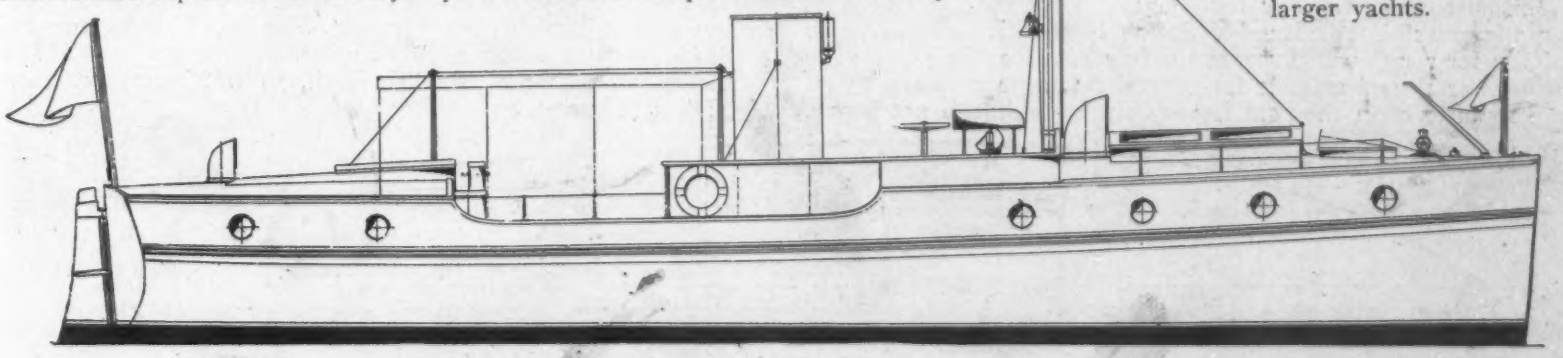
A TYPE of power launch designated as "high-speed ferry," for want of a better name, is rapidly coming into favor with many New York business men, who have summer homes on the shores of Long Island Sound or the Hudson River, and who want immunity from the hot and crowded commutation trains. To enjoy this form of transportation a dozen years ago it was necessary to maintain an expensive steam-driven craft of from 130 to 150 feet, the greater part of which was given over to boiler and engine space, which with accommodation for a numerous crew left but small space for the owner, and this at a cost totally incommensurate with the service rendered. Thanks to the efficiency of the gas engine the same service can be had to-day with boats of from 60 to 125 feet in length at a very much smaller outlay, both as to first cost and upkeep, with increased convenience and speed.

One of the fastest of the gas-driven boats in this service is the launch Sagitta, plans of which are reproduced here, owned by J. R. DeLamar, Esq., whose summer house is at Glen Cove, L. I. She was built from designs by R. M. Haddock, by the New York Yacht Launch and Engine Company of Morris Heights. While designed primarily for this service, and with a view to the maximum speed obtainable in a boat of her dimensions, she still has considerable accommodation and can be used for short cruises. Her general dimensions are: Length, 84 feet; beam, 10 feet; draft, 3 feet 3 inches. The hull is of a modified Normand type, very lightly built and of double-skin construction. Owing to a carefully worked out construction plan and a high grade of workmanship she does not suffer from this feature of lightness and is amply strong to meet the conditions of this service. The engines are two 8-cylinder, 7½ inches by 7½ inches, 4-cycle machines driving twin screws at about 850 revolutions, approximately 190 horsepower being developed by each engine. The general arrangement shows a fore-deck 16 ft. in length, a pilothouse 13½ ft., containing two Pullman berths and sofa, followed by an engine-room, galley and an after saloon. Her maximum speed is 29½ miles per hour. Photograph shows her doing 26 miles.

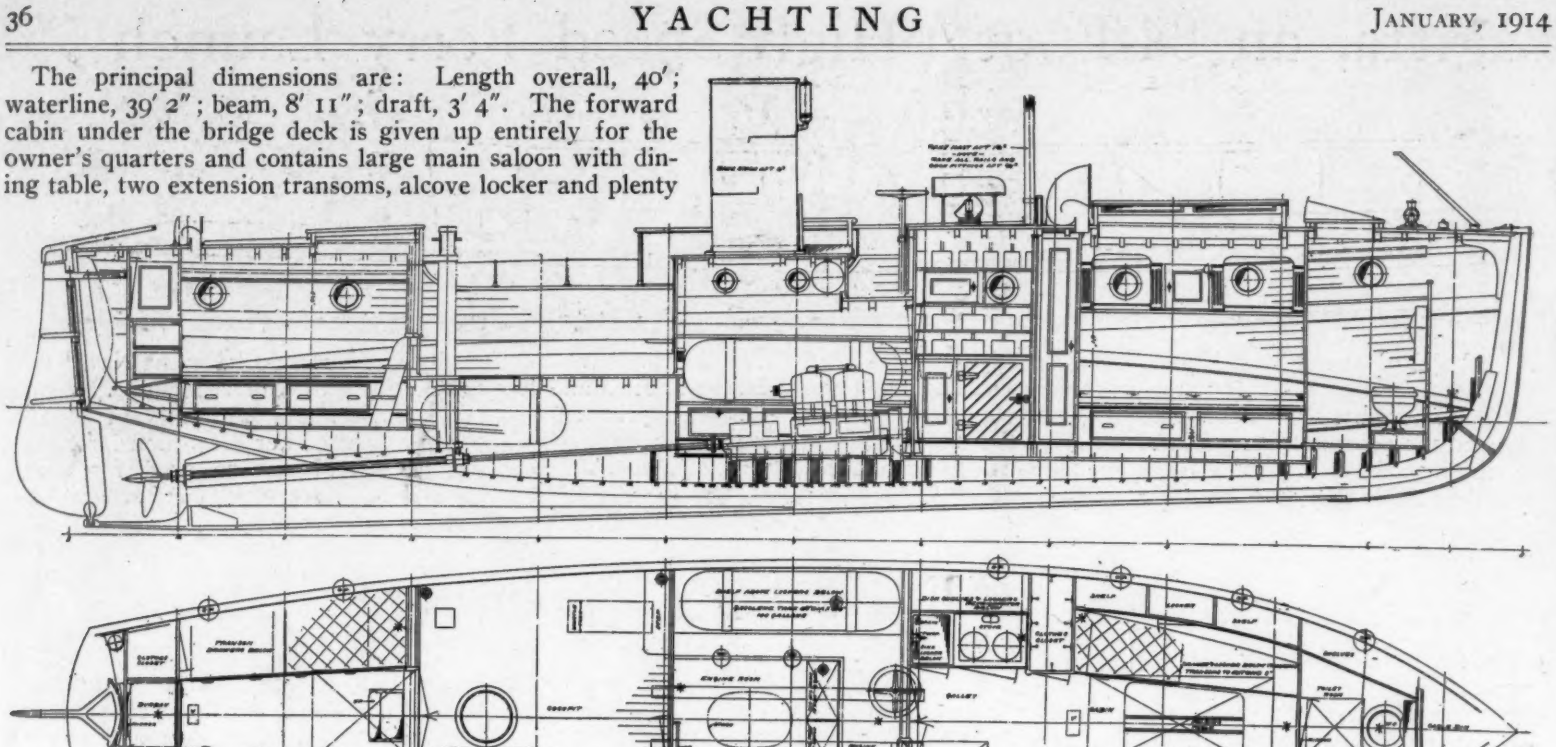


A 40-Foot Cruiser for the Great Lakes

THE plans of the 40-foot double cabin, raised deck power cruiser shown herewith are for a boat designed for Mr. W. T. Warren, to be used for cruising purposes on the Great Lakes, and are by Swasey, Raymond & Page. The boat was designed primarily with a view to sea-going qualities and speed, and was laid out to give the maximum amount of room possible below in a boat of this type. The lines show plenty of flare forward, good depth with considerable displacement and buoyancy. Her construction plan has been carefully worked out with a view to strength without undue weight. The raised deck forward and aft with amidship house over the engine-room and a comfortable cockpit give her accommodations of many larger yachts.

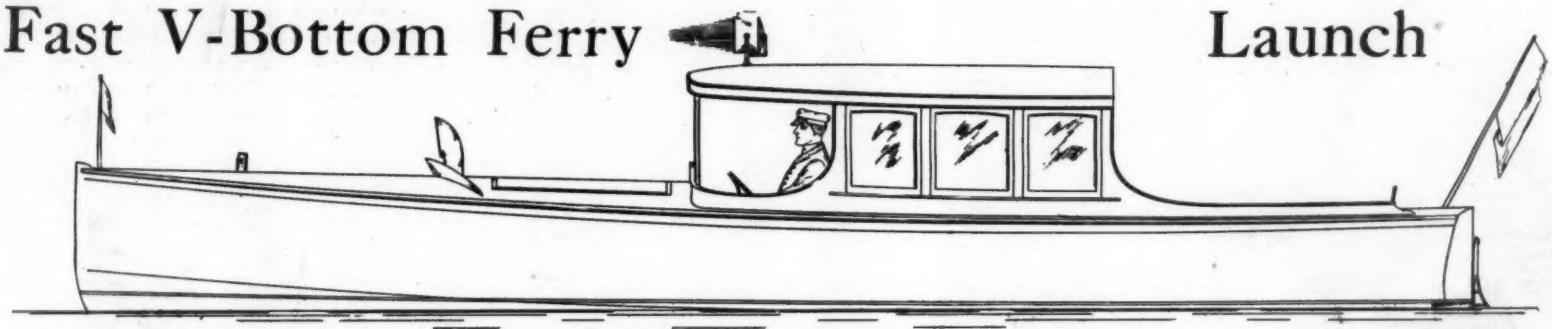


The principal dimensions are: Length overall, 40′; waterline, 39′ 2″; beam, 8′ 11″; draft, 3′ 4″. The forward cabin under the bridge deck is given up entirely for the owner's quarters and contains large main saloon with dining table, two extension transoms, alcove locker and plenty



of shelves, besides a clothes' locker and toilet room. The companion stairs lead into a small vestibule, while aft of the main saloon is the galley. The bridge deck amidships is 6 feet 6 inches, giving plenty of room for a large party, and under this deck is located the engine, a 30-horsepower 4 cylinder Sterling. The small trunk over the engine gives headroom in this compartment of 5 feet 3 inches. Abaft the engine-room is a 7-foot cockpit, while in the extreme after-end of the boat is a double stateroom.

Fast V-Bottom Ferry Launch



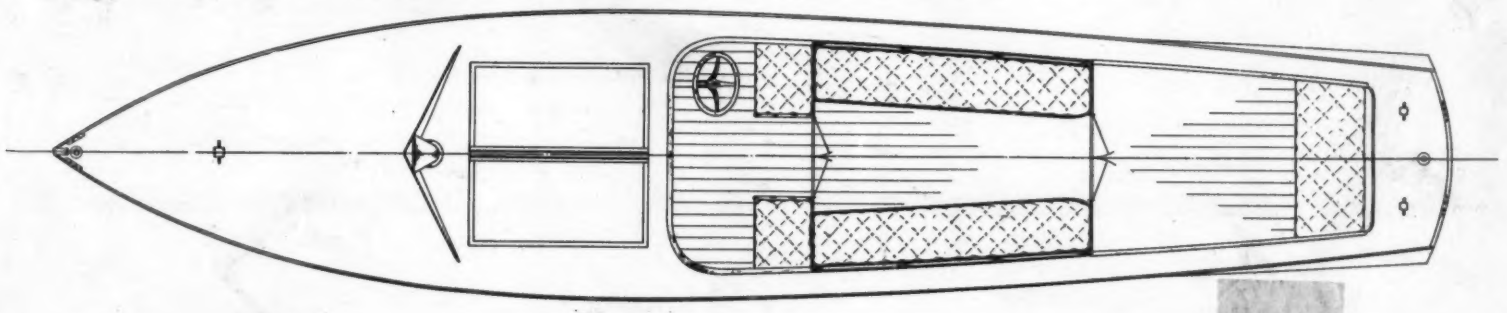
AN interesting boat is shown herewith in the design of a modern V-bottom fast ferry launch, made by Wm. H. Hand, Jr., of New Bedford, Mass., for a Canadian yachtsman, for whom the boat is now building. It is to be used on one of the larger lakes in the Canadian Northwest.

This attractive design provides a helmsman's pit forward, which is protected from the weather by an extension of the cabin top with a glass wind and spray shield of the automobile type; a cabin which will seat eight or ten passengers and provide shelter on rainy and cold days, and an open cockpit aft for chairs. While designed primarily for lake and river use the hull lines are of the well-known Hand-V-Bottom type, which has proved its ability for rough water use, so the new boat may be expected to be seaworthy and suitable for general runabout purposes.

In construction the boat is very strong, although not heavy. Mr. Hand's combination of web and longitudinal framing is used. This type of construction is very simple, yet highly efficient. Web frames are provided, speed three feet on centers. Longitudinal frames are spaced about six inches on centers, with the planking seams centering on the longitudinals, to which the planking is fastened. This system eliminates all steam bending and produces a symmetrical hull, which is extremely rigid and strong and which follows the design accurately. In many ways this method of building is like that used in modern steel ships.

The power-plant will be a 4-cylinder 25-40-horsepower Loew-Victor motor, installed with an electric self-starting and lighting system and full automobile control. The speed under service conditions will be in excess of 16 miles.

The dimensions are: Length overall, 30′ 6″; beam, extreme, 6′ 3″; draft, extreme, 1′ 10″.



TOMBOY II, A 25-FOOT TRUNK CABIN CRUISER DESIGNED BY J. A. CONNOLLY, JR., FOR USE AT SANDUSKY, OHIO

An Attractive 16-Foot Lap Strake Catboat

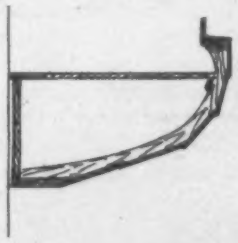
THE plans of the little 16-foot overall catboat, which are reproduced herewith, are by George L. Chaisson, of Swampscott, Massachusetts, well known as a designer and builder of the popular Swampscott dory. The present boat is a modification of the dory type, the bow and stern being different, though the midship section and construction are practically the same as in the sailing dory.

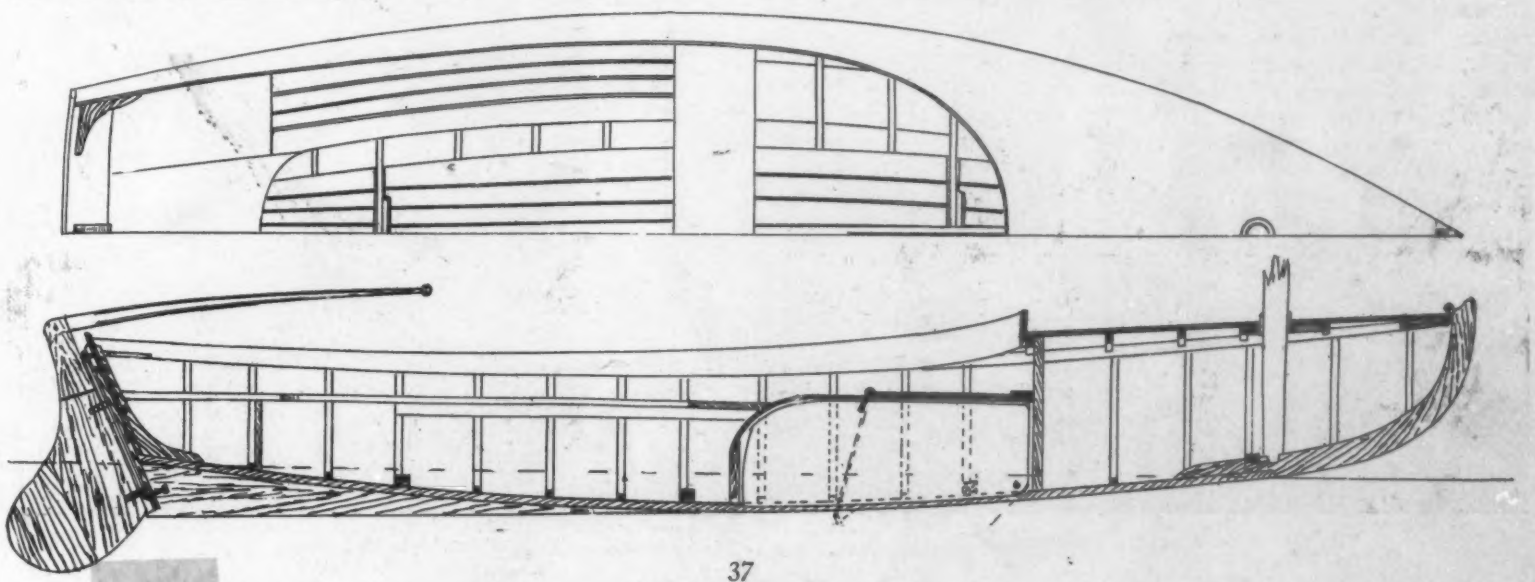
This little boat is 16 feet long overall; 13 feet 2 inches on the waterline; 5 feet beam and 7 inches draft without board and 2 feet with board down. The construction is lap-strake and the plans show a smart, able and pleasing looking little craft, with a good deal of room in her.

The cockpit has side seats on both sides as well as a 'thwart amidships at the after-end of the centerboard trunk. The deck extends entirely around the boat except at the transom, and the cockpit is protected by a coaming.

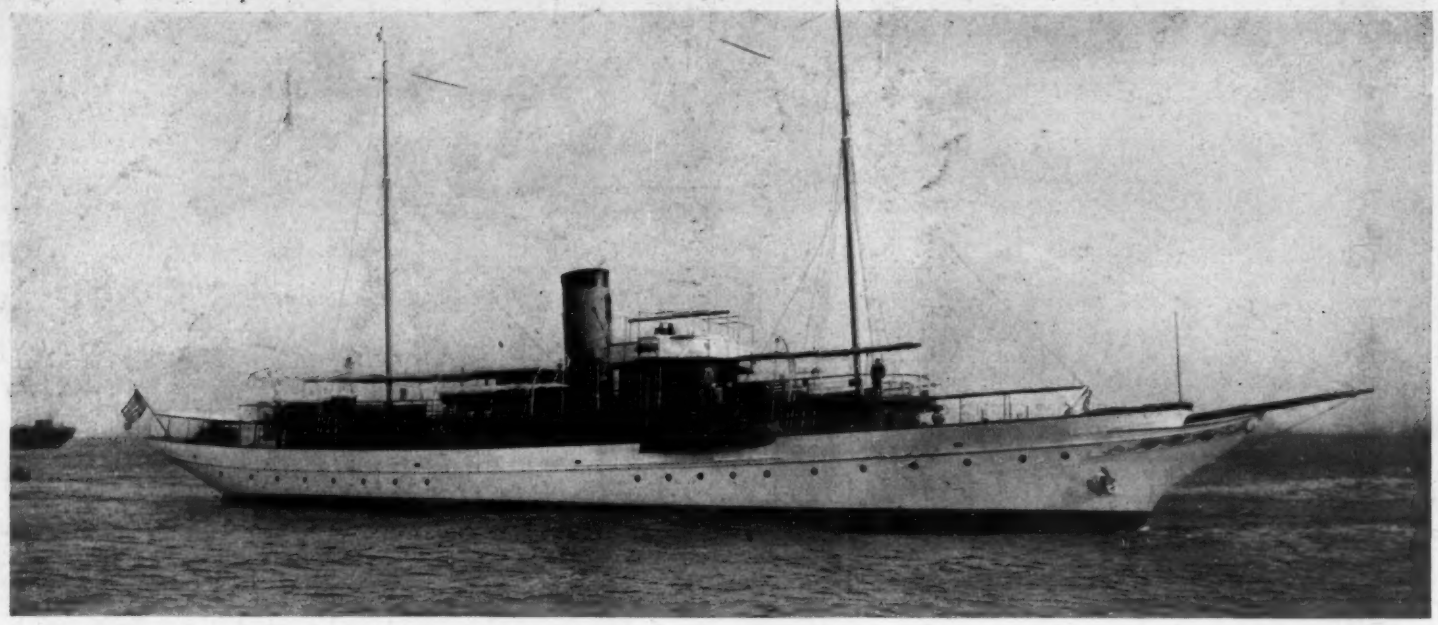
The sail area, in a cat rig, is 115 square feet. This is not too much, as the boat has good bearing surfaces. She can be sailed by two without ballast or by one with a few sand-bags in the bottom. The boat is made of good material, is well finished, has bottom boards, deck fittings, and everything complete, ready to go into the water. She can be built, including sail and fittings, for about $100.

This will make a very attractive small boat class for any club, where a handy, inexpensive craft for day sailing and class racing is wanted. She is just the thing to put into the hands of the youngsters to sail or for those wanting to race around a short, sheltered course.





Sialia, a New Steam Yacht



IT is always pleasant to chronicle the building in this country of any large vessel, especially when that vessel happens to be a yacht. The steam yacht Sialia, which sailed from this port last month for a Southern cruise, was recently completed at the yard of Pusey & Jones Co., for Mr. J. K. Stewart, a member of the Chicago and other yacht clubs. The yacht is one of the handsomest and fastest offshore cruisers of its size afloat and is a splendid addition to the fleet of American built yachts. The plans were prepared by Messrs. Gielow & Orr, of New York, who superintended the construction.

A notable feature of the Sialia is the use of crude oil for fuel, which gives her an exceptionally large cruising radius of over 6,500 miles. So far as known, there is no yacht of this size which has a cruising radius in any way approaching this. On the trial trip the yacht developed a sustained speed of 15.15 knots.

Sialia has an overall length of 203 feet, waterline length of 170′ 3″ and a beam of 26′ 6″, with 17′ 6″ depth of hold. From these dimensions it will be seen that the vessel is of a powerful cruiser type. The hull is of mild steel of great tensile strength. The plating is worked in in-and-out strakes, thus producing the strongest possible construction. No attempt was made to economize in weight, for in preparing the design of this craft the object was to produce a thoroughly substantial vessel, capable of going to sea at any time.

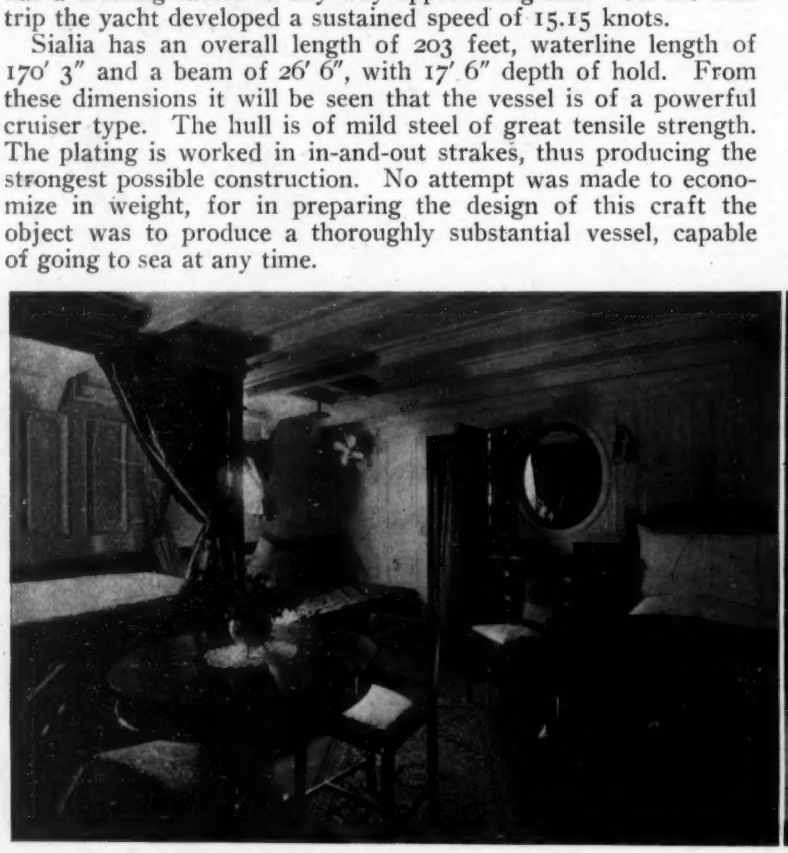
The lines of the yacht, while showing power, are very easy, extending in fair curves from stem to stern. Her sheer is graceful and the whole appearance of the hull clean cut and well proportioned. The deck is flush and runs the full length of the vessel. The bulwarks are of steel, finished with a teak rail.

The deckhouse is of steel, 119 feet in length, with a shade deck extending to the sides of the hull. At the after-end of the house there is a shelter hood with glass side panels, divan, etc., and a stairway leading to the upper deck.

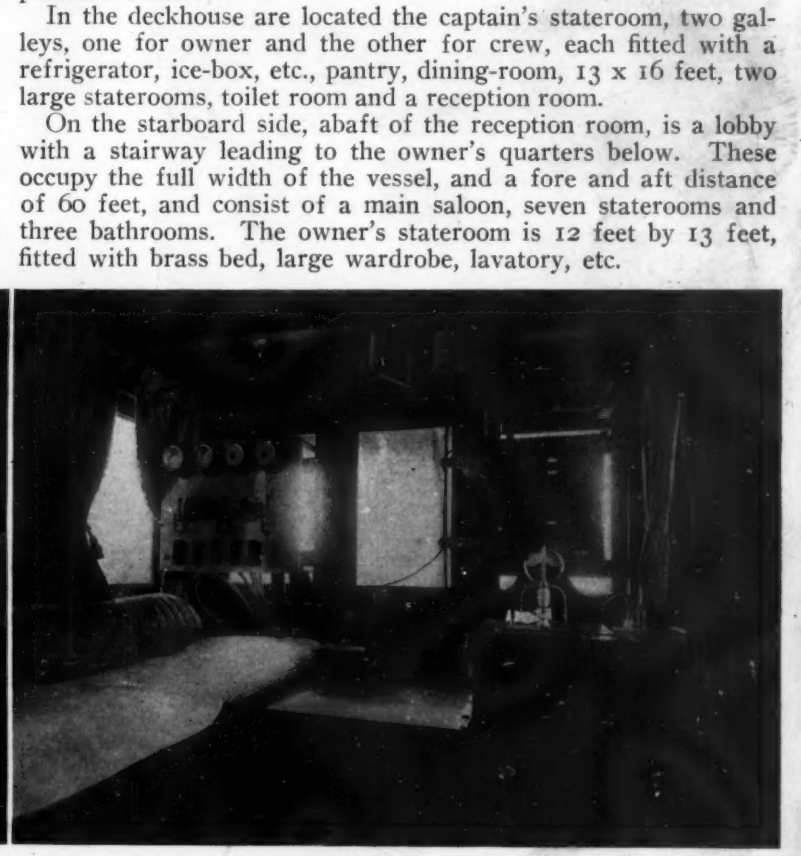
In planning the accommodations, all the owner's and guests' accommodations were grouped in the after-part of the vessel, and the crew's accommodations forward, resulting in a commodious arrangement that cannot be excelled for convenience and personal comfort.

In the deckhouse are located the captain's stateroom, two galleys, one for owner and the other for crew, each fitted with a refrigerator, ice-box, etc., pantry, dining-room, 13 x 16 feet, two large staterooms, toilet room and a reception room.

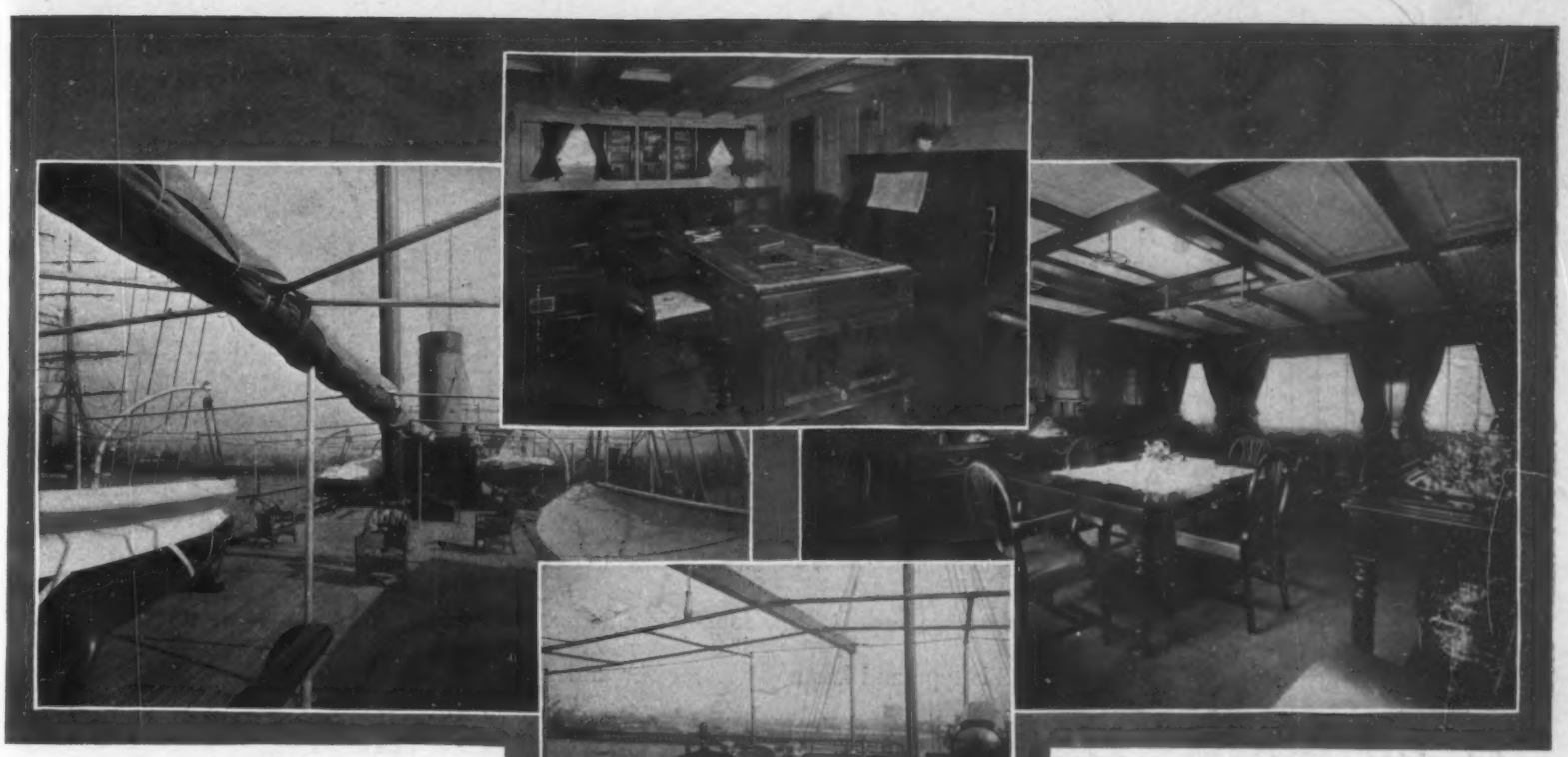
On the starboard side, abaft of the reception room, is a lobby with a stairway leading to the owner's quarters below. These occupy the full width of the vessel, and a fore and aft distance of 60 feet, and consist of a main saloon, seven staterooms and three bathrooms. The owner's stateroom is 12 feet by 13 feet, fitted with brass bed, large wardrobe, lavatory, etc.



ONE OF THE SPACIOUS STATEROOMS



THE WIRELESS ROOM



THE BROAD, AFTER BOAT DECK

THE MAIN SALOON

THE DINING SALOON IN THE DECK HOUSE

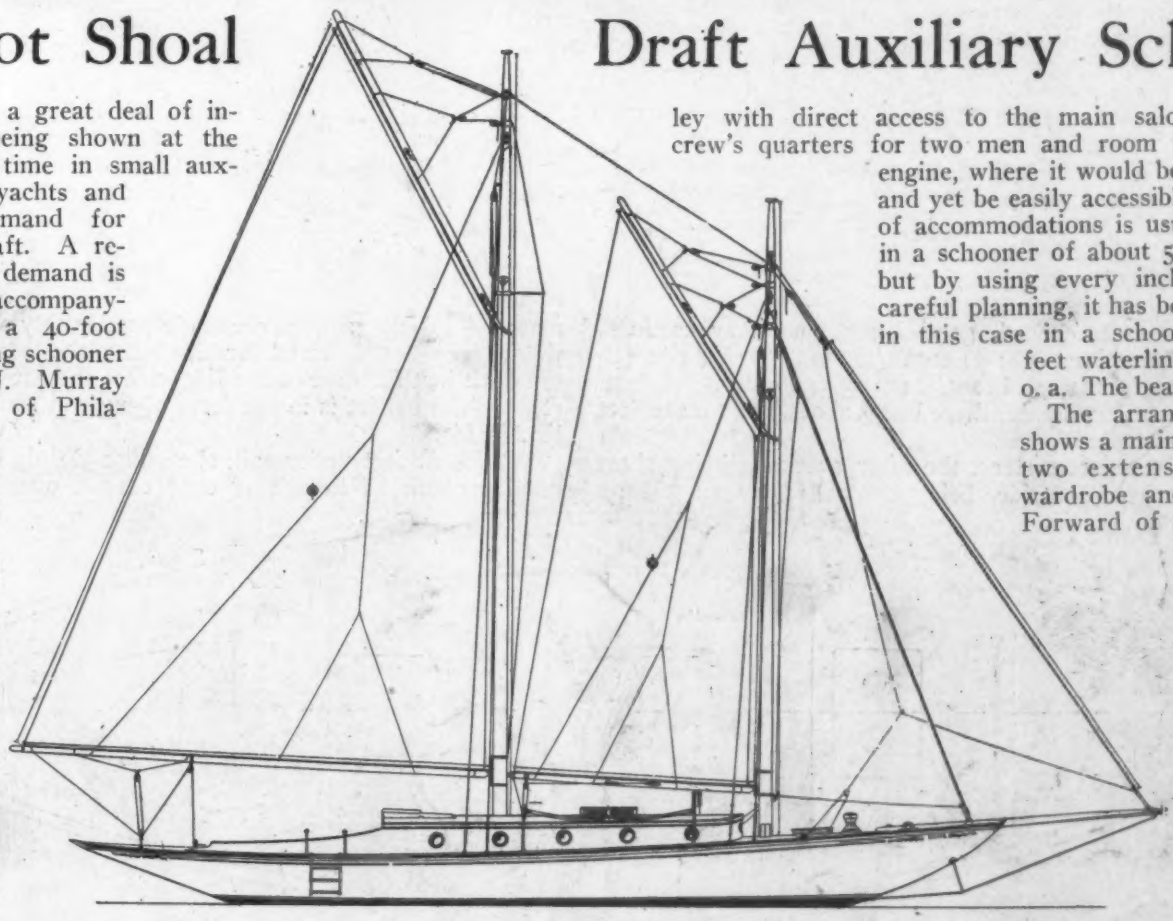
THE NAVIGATING BRIDGE

The vessel is driven by a pair of three-cylinder triple expansion engines, driving Monel metal propellers, so that in case of any accident to one of the engines the other set will still be able to drive the vessel at about eight-tenths of the maximum speed. The fuel used for generating steam is crude oil, which is carried in oil tight compartments in the yacht, many times sub-divided, so as to prevent undue motion in a sea way.

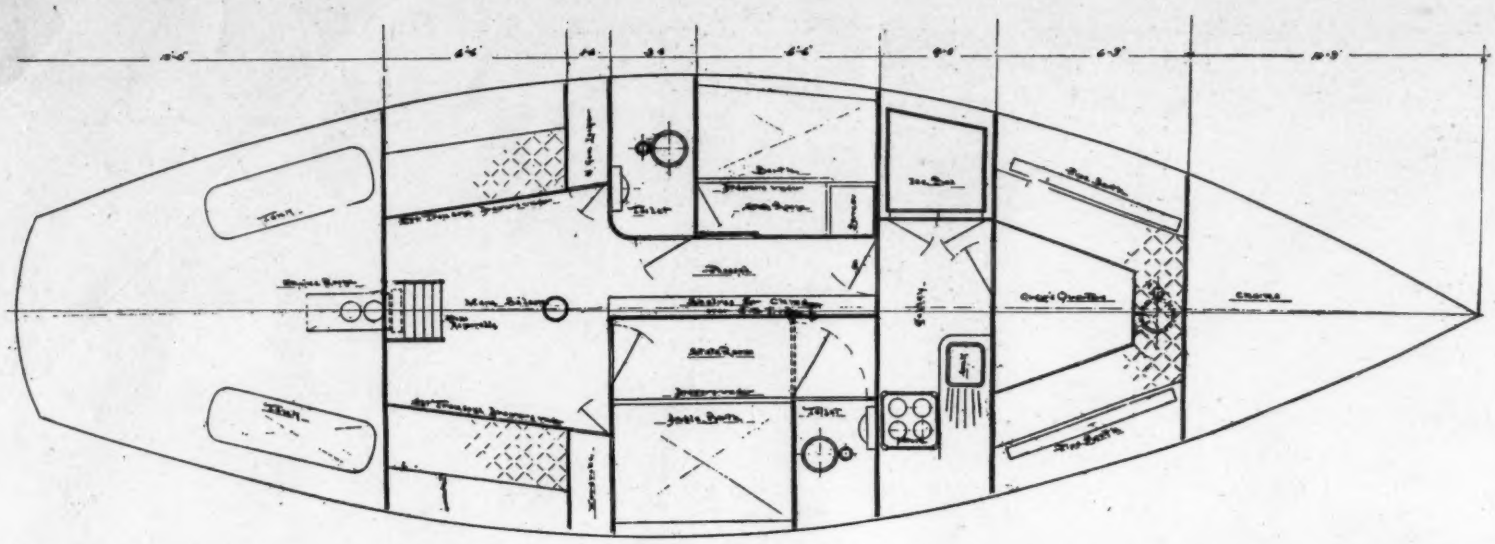
The yacht is equipped with six boats, consisting of an express launch, with a speed of fully 20 miles an hour, a 25-foot service launch, a cutter, a power dinghy and two metallic life-boats. In addition, the yacht is equipped with the necessary life-saving devices required by United States rules and regulations.

40-Foot Shoal Draft Auxiliary Schooner

THERE is a great deal of interest being shown at the present time in small auxiliary cruising yachts and a growing demand for this kind of craft. A reflection of this demand is shown in the accompanying plans of a 40-foot waterline cruising schooner designed by J. Murray Watts, N. A., of Philadelphia. The problem put up to the designer was to turn out the smallest, light-draft schooner that would give the following accommodations: A main saloon, a guest's stateroom with a toilet, a large stateroom for the owner with a separate toilet room, a galley with direct access to the main saloon, comfortable crew's quarters for two men and room for an auxiliary engine, where it would be out of the way and yet be easily accessible. This amount of accommodations is usually found only in a schooner of about 55 feet waterline, but by using every inch of space, and careful planning, it has been accomplished in this case in a schooner of only 40 feet waterline length, and 61 o. a. The beam is 16′, draft 4′.



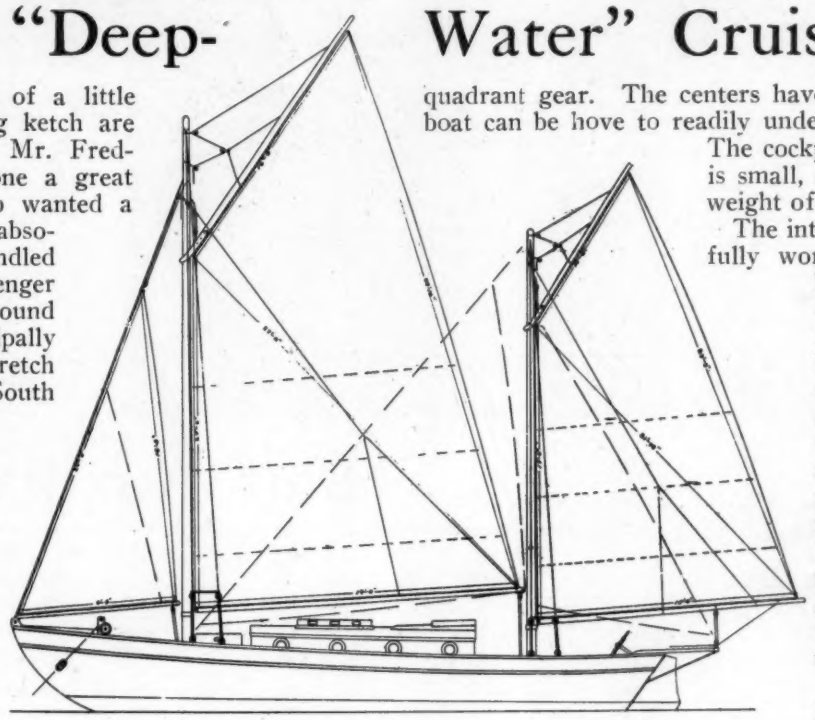
The arrangement adopted shows a main saloon aft with two extension transoms, wardrobe and a gun locker. Forward of this on the port side is a toilet room opening into a passage, which leads from the main saloon to the galley. There is also a door from this toilet room to a guest's stateroom on the same side. On the starboard



side is a large stateroom for the owner, with a double berth with drawers under and a toilet room forward.

The galley is unusually large for a boat of this type and has a four-hole Shipmate stove, large ice box and good locker room. The power to be installed will be a 2-cylinder engine of about 18 horsepower under the after deck.

A 38-Foot "Deep-Water" Cruising Ketch



THE accompanying plans of a little 38-foot overall cruising ketch are by an amateur sailor, Mr. Frederick A. Fenger, who has done a great deal of ocean work, and who wanted a little boat that could go absolutely anywhere and yet be handled by a very small crew. Mr. Fenger has done a lot of cruising around the West India Islands, principally ahong the leeward group that stretch from Porto Rico down to the South American coast, in a little 17-foot canoe of his own design, and the present boat is the answer to his desire for a boat capable of more extended cruising, with greater safety and comfort.

A careful study of her plans shows that she is designed particularly for ocean work. She is full bodied with very short overhangs, insuring good buoyancy, has plenty of sheer, moderate freeboard, good beam, and easy sections. Her principal dimensions are: Length overall, 38 feet; length waterline, 31 feet; extreme beam, 11 feet, and draft, 6 feet. The sail area is very moderate, there being about 700 square feet in the three working sails.

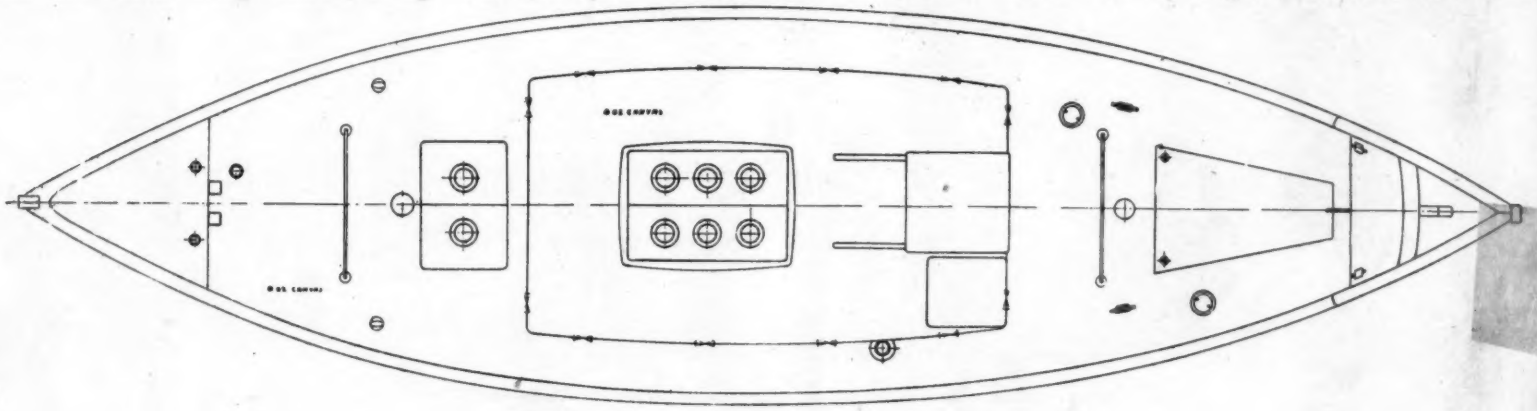
The boat has a transom stern, the after overhang being short and the rudder hung outside, being controlled by an Edison quadrant gear. The centers have been worked out so that the boat can be hove to readily under several combinations of sail.

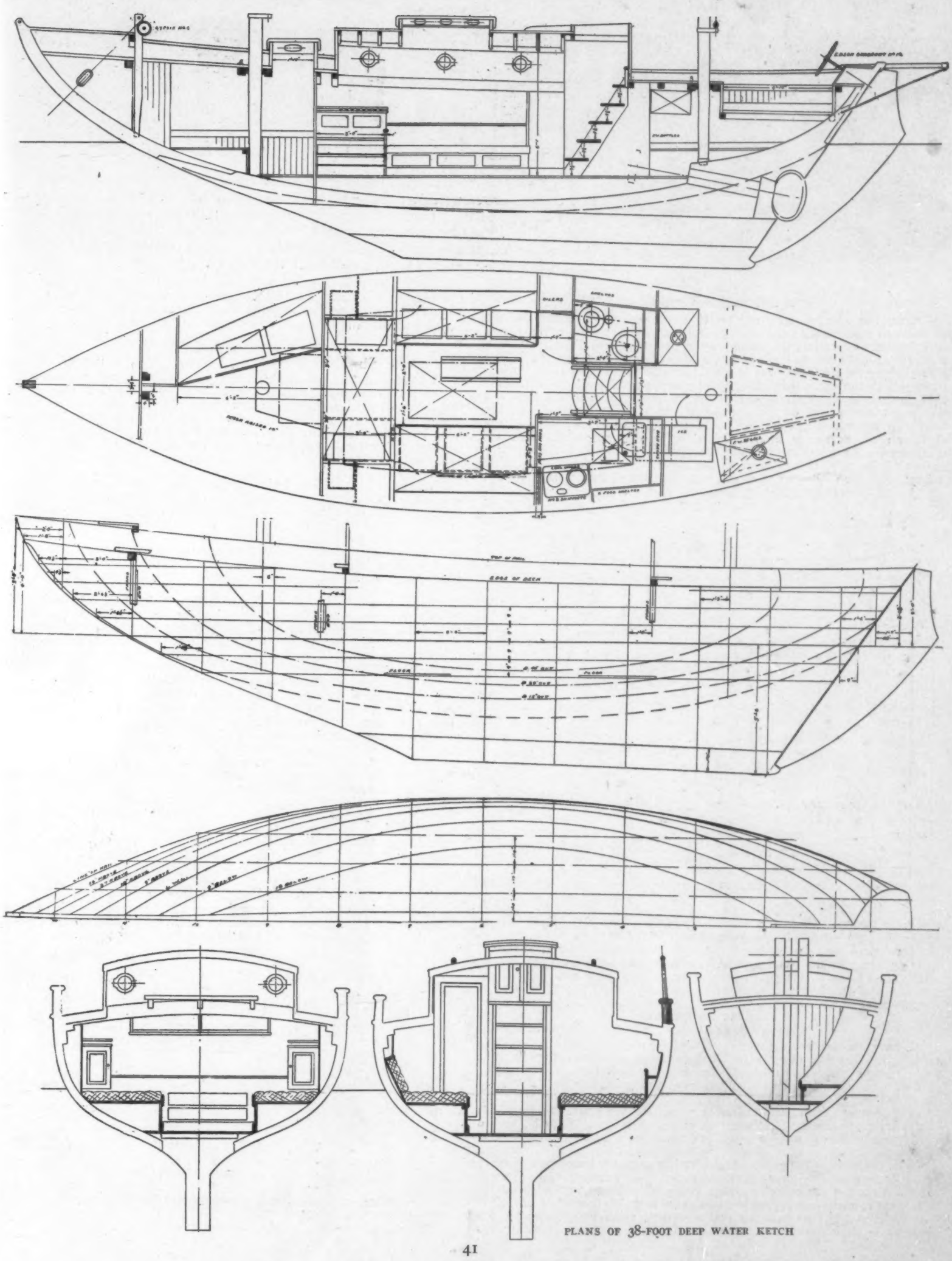
The cockpit is aft of the jiggermast and is small, so that it will not hold a great weight of water.

The interior arrangement is very carefully worked out, with the galley aft by the companionway, so that one man can leave the wheel for a few minutes and duck below to watch the frying pan or coffee pot, while the boat sails herself. A novelty in the way of berths is a wide thwartship bed across the forward end of the cabin between the buffets on either side. While this is not a good position when the boat is rolling, it will make an excellent berth when the boat happens to be on tack for any length of time.

There is plenty of room forward, the hatch in the forecastle being aft of the mainmast. All deck openings are made particularly strong and watertight. The boat is bored for an engine, the location being under the deck just forward of the jiggermast and aft of the companion steps. The ballast is in the form of an iron shoe with additional lead inside.

While not fast under sail, she will certainly be able to give a good account of herself if ever caught offshore in a breeze.





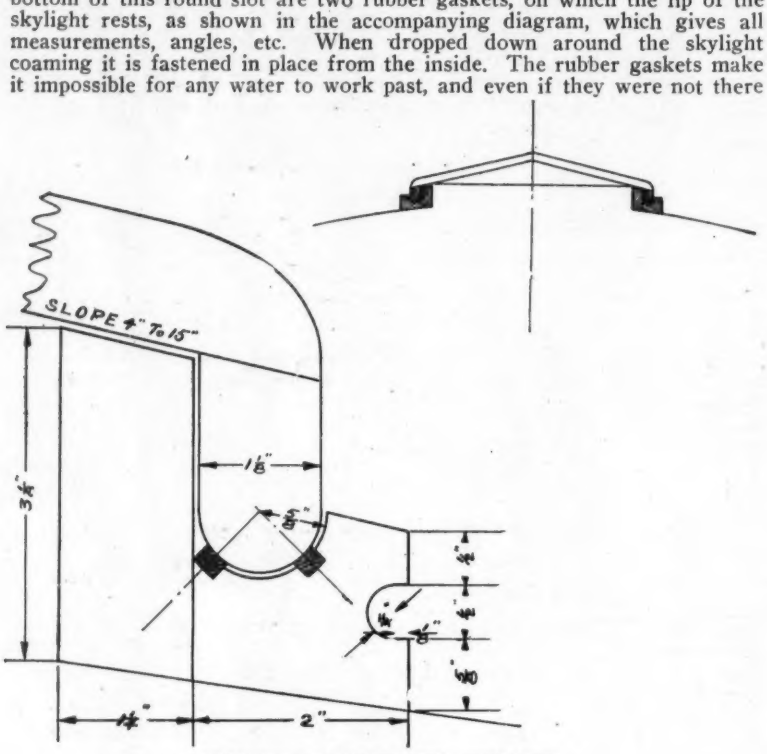
PLANS OF 38-FOOT DEEP WATER KETCH

MESS ROOM TALK

IN this Department we will answer questions concerning the problems which boat owners are constantly running up against in the operation of their motors or the handling of their boats. Theoretical as well as practical questions will be answered promptly by mail, and when of sufficient interest will be printed for the benefit of YACHTING readers. This service is free. Don't hesitate to make use of it. Address, Information Department, YACHTING, 141 W. 36th St., New York City.

A Watertight Skylight

Every one who has done any cruising or rough-water sailing has had occasion to anathematize the average leaky skylight or deck opening, and will therefore appreciate the accompanying sketch of a skylight for a deep sea cruiser designed to be absolutely watertight. The skylight is not hinged along the ridge pole but is a solid hatch with the two sides sloping, as shown in the cut. Instead of merely dropping down onto a beveled skylight coaming, the under edge of the hatch proper is rounded off and fits into a round slot on the outside of the skylight coaming. In the bottom of this round slot are two rubber gaskets, on which the lip of the skylight rests, as shown in the accompanying diagram, which gives all measurements, angles, etc. When dropped down around the skylight coaming it is fastened in place from the inside. The rubber gaskets make it impossible for any water to work past, and even if they were not there



DETAILS OF WATERTIGHT SKYLIGHT

the water could not work up higher inside of the edges of the skylight than the level of the outside of the round slot.

Instead of lights of glass in the skylight three or four round glass bull's-eyes set into the wood prevent leakage and do away with any danger of the glass being broken by shipping a heavy sea. This form of skylight could be used to advantage in power boats or sailboats likely to be used in rough water.

Surface Propellers

PITTSBURG, PA.

I have written several places for information in regard to surface propellers. Can you give me any information as to whether or not these are used with success on a boat 60 feet long by 10 feet beam? Would be glad to have any information about them you may have. L. S. W.

I do not know personally whether or not surface propellers have been successfully used on boats as large as 60 feet in length. They have been used successfully on smaller boats and have been tested out with good results.

The principle of the surface propeller is that as the lower part of every propeller is what does the actual work, it is not necessary to have more than that part of the propeller under water. The advantages claimed for it are that cavitation is impossible, that there is no shaft strut or propeller-boss under water, thus reducing resistance to a minimum, that as large a shaft as is desirable for strength may be used without impairing the efficiency of the boat, and that direct-engine drive is possible with less shaft angle owing to the propeller being at the surface. The propellers are also accessible and can be replaced while the boat is afloat.

Leaky Garboards

BOSTON, MASS.

I have a 30-foot over-all auxiliary yawl, centerboard, 2½ feet draft, 10 feet beam, which leaks badly around or through the garboard. I have had it calked, puttied, painted, etc., but when she sails hard, or it is rough, she seems to work and open up; while at mooring leaks very little. The floor boards of cabin are only 2 inches above the bottom boards, so if any water comes in makes it very wet and sloppy. I had a board mortised over the frames and set over the garboard along the keel, but this did little good.

What can I do? Shall I have new garboards put in and more frames, or could new frames be set in alongside of the old ones to run as far as the transoms, as I don't care to rip the boat all to pieces? The frames are light for a boat of this size, I think. Would lead sheeting tacked on the outside do any good? The garboards are not rabbeted into the keel but just set flush on the keel. Evidently the garboards pull away when sailing. As I wish to have something done about this this winter I will greatly appreciate your advice. C. B.

It is a very hard matter to make a boat tight that leaks and works around the garboards. In the first place, the construction of the boat is bad, as the lower edge of the garboards should be rabbeted into the keel instead of merely laid against it and fastened to a strip nailed along the keel, it being almost impossible to keep the latter construction from working and spewing out the calking.

If you are sure this is where your trouble lies, I think it would be best to have new garboards put in with the lower edge rabbeted in the keel, provided the wood in the keel is in good condition. You can, of course, have additional frames run in extending from the keel as far up as the turn of the bilge to which the garboards could be fastened, and while this would stiffen the boat somewhat, I don't believe it alone would prevent her working enough to admit water when the boat is sailed hard.

If your present frames are in good condition, this latter expediency should not be necessary unless the frames are unduly light, as you say. I think new garboards, put on properly and rabbeted into the keel with the addition of a few extra frames running to the turn of the bilge, would stiffen the boat so that she would not leak. This should not be a very expensive proposition if done during the slack season. Lead sheeting tacked on the outside would not prevent leaking, as it could not be made tight around the edges.

A Hint on Sail Covers

Every sailor who takes care of his own boat has probably chafed at the fussy job of putting on sail covers. Sail covers should always be long enough to fully cover the sail and hang down below the boom, and are

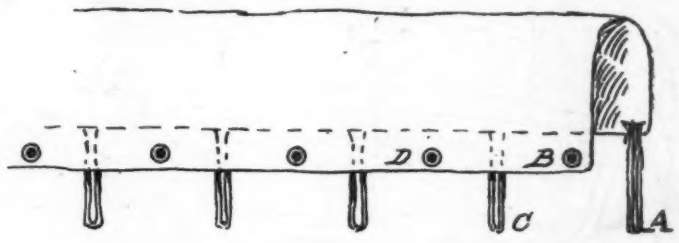
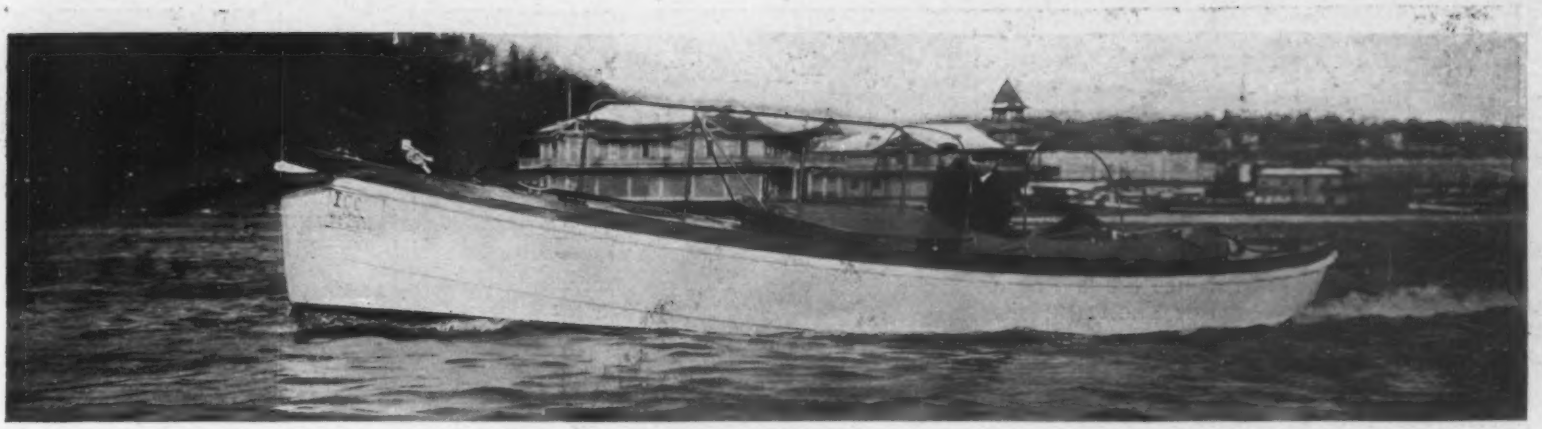


FIG. I

FIG. 2.—FASTENED



A GASOLENE PILOT BOAT, BUILT BY THE GAS ENGINE & POWER COMPANY AND CHAS. L. SEABURY COMPANY, FOR USE AT PANAMA. SHE IS 35 FEET LONG OVER ALL, AND IS AN IDEAL ROUGH WATER OPEN BOAT, DESIGNED WITH THE MOST EFFICIENT SHAPE OF HULL FOR PILOT SERVICE. SHE IS POWERED WITH A FOUR-CYLINDER, 6-INCH X 6-INCH SPEEDWAY MOTOR, THAT DRIVES HER 10 KNOTS AN HOUR, AND SHE CARRIES 125 GALLONS OF GASOLENE. THIS IS THE THIRD PILOT BOAT BUILT BY THIS COMPANY FOR SERVICE AT THE ISTHMUS

usually fastened either by stops, which must be poked through a grommet on the other side of the cover and tied, not a neat job, or by lace lines, which must be passed the entire length of the cover. The accompanying diagram from the *English Yachting Monthly* gives an excellent hint on a new method of fastening the cover. On one edge of the cover a bight, or loop of line, is attached very much as a stop is in the common method. Opposite each loop is an eyelet grommet large enough to allow the loop to be rove through easily.

To fasten, pass the bight *A* (as shown in the sketch) through the eyelet *B;* pass the bight *C* through the eyelet *D,* and also through the bight *A,* which should just reach it with the cover pulled together; repeat the operation all along, reeving each bight through its opposite eyelet and through the previous bight until you come to the end. The last bight can be either hitched round its own part underneath the cover or secured with a separate end rove through it.

This makes a very neat lacing and is easy to cast off. When the end bight is loosened the others can be pulled out as fast as one can walk aft along the boom.

About a Skate Sail

LEXINGTON, KY.

I desire some information about a skating sail which I intend for use on small Michigan lakes. Would like to know all about different kinds and their construction. D. M. S.

Most skating sails are made in triangular shape, with a perpendicular yard and a sprit running from center of this yard to the apex of the sail. The yard is about 4½ feet high and sprit about 6 to 6½ feet long.

This is the accepted form of skating sail, and they are carried with the base of the triangle forward. They can be had from almost any sailmaker, or you can make them yourself with very little trouble. Wilson & Silsby, Rowe's Wharf, Boston, Mass., make them.

Sail for a 12-Foot Dinghy

NEW YORK.

I have a 12-foot yacht tender, 50-inch beam, which I would like to equip with a sail and centerboard, provided that the boat is built strongly enough to carry sail. I enclose some rough sketches showing her lines and dimensions. She is a very well-built boat, having ¾-inch x 9/16-inch frames, laid flat and spaced 8 inches on centers. Her planking is ½-inch cedar, smooth skin (that is, butt-jointed). Her keel is only 1⅛ inches wide by 1½ inches deep, and therefore a new section of keel would have to be inserted to accommodate a centerboard. Would you advise this? Is the boat heavy enough for afternoon sailing? Can you give me some idea (in a sketchy way) as to the sail area and shape of same, also where to step the mast and where to place the board? How much ballast should I carry, if any? I also have some friends who are very much interested to obtain your advice about this 12-foot dinghy outfit. G. F. M.

From the data you give I think it is perfectly feasible to equip your boat in the manner you suggest. She seems to be heavily enough built and her profile and sections are good, giving her sufficient stability for a boat of this type. You would, as you say, have to cut her keel for the centerboard, and would probably have to insert new sections on either side of the centerboard slot, owing to the keel being only an inch and an eighth wide. By the use of an iron plate centerboard, however, the centerboard slot can be kept down to the smallest possible width, and a boat builder would have no trouble in fitting a board to your boat. I have marked on the sketch you sent me the approximate position of the centerboard trunk. The mast should be from 20 inches to 24 inches aft of the stem of boat, if cat-rig is used.

About 90 square feet of sail would be all that you would care to carry on the boat. You will find the cat-rig better than a jib and mainsail on a boat of this size, and it is advisable to have the sail peaked up rather high. (Almost as high as in a gunter rig with gaff set close to mast.) This allows of a shorter mast and gives a better looking sail. The center of effort of sail and center of lateral plane should fall nearly in a perpendicular line to give the boat the proper balance.

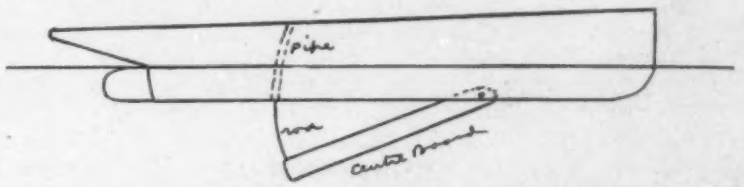
With two or more in the boat you would not need any ballast. In sailing alone in a breeze of wind it might be advisable to have a couple of sandbags weighing about 100 pounds. Such a boat would be heavy enough for afternoon sailing on smooth water, but, of course, would not be an extremely good sea boat, as she would fill and capsize if she got down too far.

(Unfortunately it was not possible to reproduce the drawings.)

About Centerboard for Sharpie

NEW YORK.

D. E. P., who writes the December YACHTING concerning his New Haven sharpie, can overcome his centerboard trouble easily in the following manner:



Take out the centerboard and trunk and plug up the slot even with the cabin floor. Hang a long centerboard, *not more than six inches deep,* to the bottom of the boat, and coming up into the centerboard slot as much as possible. The narrow centerboard lowers by means of a rod running through a pipe, as in the accompanying sketch. The sharpie will go to windward all right with this board, and the owner will have all the cabin to himself except for the pipe. J. H. C.

The Origin (?) of the Screw Propeller

We do not vouch for the authenticity of the following account of the invention of the screw propeller. However, it sounds plausible, and we give it for what it is worth:

It seems that way back in 1858, the stout Dutch bark Groote Marie, Capt. Van der Broeck, bound from Amsterdam to the East Indies, became dismantled in trying to round the Cape of Good Hope, and, because of high seas, was in a generally bad plight. Just as things were looking particularly black, an investigation of a terrific blow received by the vessel on her high, square stern, revealed the fact that a large whale had crashed partly through the rear boards and had got caught in the timbers. Fortunately, water which was pouring into the after hold was promptly blown out through the open hatchway by the struggling animal, and in endeavoring to release itself the big mammal lashed the water with its tail so violently that it propelled the bark ahead at seven knots an hour into Cape Town harbor.

It was in watching the mighty effect of the whale's tail that the good captain conceived the idea of a screw propeller, but neither the Dutch merchants of Cape Town nor his brother skippers of Amsterdam were sufficiently interested in his tale to unite with him in patenting the device.

Propeller Pitch

TACOMA, WASH.

I do not get the speed out of my 25-foot runabout which I have a right to expect from the engine I have, and I believe that I may not have the right propeller. I have tried several, each time getting one with a greater pitch, but they don't seem to improve matters any, as they simply churn up the water at the stern. Can you give me any advice? S. B.

It very often happens that motor boats, especially fairly heavy ones, are fitted with propellers with more pitch than is required to drive them at their best speed. In these cases the horsepower is absorbed in churning up, as you mention, and it is often possible to increase the speed materially by the use of a propeller with less pitch, allowing the motor to turn up its maximum revolutions and develop more horsepower. If you think your pitch is greatly in excess of what it should be, it would be better to try a larger diameter propeller with less pitch.

EDITORIAL

America's Cup Talk Since the last number of YACHTING went to press, what we prophesied in that issue in regard to three boats for the America's Cup defense has become an assured fact, and a third boat is to be built from designs by the Boston naval architect, George Owen, for a syndicate of which the principal members are George M. Pynchon, and E. Walter Clark of Philadelphia. With this third boat in the lists, some excellent racing ought to be seen this summer between the best that Herreshoff, William Gardner and George Owen can produce; and if the trial races are not interesting, we predict that it will be on account of lack of wind only. Outside of this there is very little cup talk going the rounds.

It has been positively announced that Captain William Dennis, lately in command of the schooner Elena, will have charge of the Gardner-designed boat and that he will have with him Captain Harry Haff, son of the old Cup defender's skipper, Hank Haff. Bill Dennis, as he is familiarly called, has not had much experience in recent years on sloops, most of his commands having been racing schooners, in which he has been unusually resourceful and successful.

Word comes from the other side that work on the new Shamrock is progressing nicely, and, from what can be gathered from the English papers, British yachtsmen feel that she will be the fastest boat of her size ever turned out there. The match is to be decided in a series of three races out of five, starting from Ambrose Channel Lightship, of alternate windward-leeward and triangular courses, the start of the first race being scheduled for September 10th.

The Motor Boat Shows It is an excellent thing, viewed from every angle, that the dates for this year's motor show have been pushed forward so that it will be held some three weeks earlier than has been the practice recently. It not only "starts things" earlier in the season, but gives those who want to look around before purchasing a chance to see new designs in boats and engines before placing their orders, yet with the certainty that the work can be done or deliveries made in ample time for the opening of the season.

This year, in place of the Boston show there will be an exhibition in Chicago—the first one held in that city in a number of years. This will follow three weeks after the close of the New York show. It would seem that the time is fitting for a Chicago show, judging from the growing interest in all kinds of boating along the Great Lakes and rivers of the Middle West. In many localities where there has not been much boating heretofore, they are just becoming aware of what constitutes a good boat and outfit, and the show should have a distinctly educational value.

International Race on Lake Ontario Some two years ago, when a cup was offered to the Yacht Racing Union for competition between America and Canada on the Great Lakes, it was hoped that the cup would bring about a resumption of racing such as that held for the Canada's Cup, which has temporarily (we hope) been buried under a lot of sea lawyers' briefs in the Rochester Yacht Club. The new cup seems destined to fulfill its mission. It was won by the Royal Canadian Yacht Club of Toronto in 1912 from the Chicago Yacht Club, and this year the Chicago Yacht Club is going to Toronto to win it back, if possible. The cup was put up for competition in the P Class. It is understood that the Canadians are building a new boat for the event. It is probable that the Chicago Yacht Club will either have a new boat built or else buy Josephine, last year's champion of the Atlantic coast. The first race will be sailed on August 15th.

Under Way for 1914

WITH the launching of this issue the old packet is off on her eighth voyage and we want all hands to tail on and help haul the hawser in as the tug casts off, and make sail. We've been at it eight years now—long enough for all hands to get pretty well acquainted forward and aft, and to know what we are trying to do in working our long traverse.

First of all, we are trying to run the ship for the benefit of the reader all the time. We are giving him just as interesting and helpful a magazine as we know how and we are always going to stand for the best there is in the sport, as we see it. We have got to take as good care of the windjammer as of the power boat man, and just remember this when you register your growl about the "other fellow" getting too much scope. We are working all the time for the good of the sport, to help put it on a more satisfying basis, and you want to remember that the two branches of it are so closely connected that they have to go forward together and one side cannot expand at the expense of the other.

Interest in the sport is growing, and growing fast, in this country and it has never been in a more healthful state; more boats are being sailed, the clubs are growing both in number and strength, more and better racing is being done, and there are everywhere unmistakable signs that there is a swinging away from automobile, golf, and such 'longshore diversions, to the water. You can't stifle the call of the sea just because some one happens to invent new contraptions to keep you on land.

The coming year promises to be an unusually interesting one from every angle. We are going to have an America's Cup contest as a climax to a season that will be chuck full of more boating than we have ever seen before. This activity is not confined to any one section. It extends from the Pacific coast, through the Great Lakes and along the Gulf and Atlantic coasts.

YACHTING is going to follow the sport closely during the season and will keep you in touch with the very latest and most authentic news of the boating world. It will cover all the principal events with its personal staff, and the best-known writers in the field will furnish the special stories.

It is up to you, however, to give us all the support you can in the matter and the best way you can do this is to send in your subscription right now, so that you will be sure not to miss a single number during the year. Most of you have signed on pretty regularly year after year and it is pleasant to record that we get many letters such as the following, when separating a man from his money:

Outing Publishing Company, New York City:

AYE AYE, SIR:—Render to Cæsar the things due him and YACHTING also, so here goes for the return voyage.

It is with pleasure that I sign on with you folks again. The ship is tight, grub is A 1, so what more can a sailor want? Being a natural born kicker, he is bound to kick and growl anyhow, I suppose, but blow me if I can see any reason for it. Funds are rather low with this old fish at present, but as your call is easy I guess you are safe in stowing this check below decks. With kindest regards to all hands and the cook, I am very cordially,

H. F. T.

Here's to 1914! Let's drink it standing.

The Captain's Story

"I never knew a varnish that would stand soap and water until I tried Valspar.

"I like things clean and bright around me, but I always had trouble with the varnish. Valspar is the only varnish I've ever used that water and weather wouldn't turn white. I can tell you Valspar makes a big difference in a cabin, and a home too, for that matter.

For we're usin' it ashore, too—the floors, woodwork and furniture have all got a coat, and the madam says the house never was as bright and as easy to keep clean. Fact is, she told the neighbors, and they think just as much of it as we do. Handy to use, for it dries over night, and you just can't wear it out."

If you do not find Valspar perfectly satisfactory, the dealer will refund the price. Booklet and dealer's name on request.

VALENTINE'S VALSPAR
The Varnish That Won't Turn White

Look for us at the New York and Chicago Motor Boat Shows

VALENTINE & COMPANY 456 FOURTH AVENUE NEW YORK CITY

NEW YORK CHICAGO BOSTON *Estab. 1832* TORONTO PARIS AMSTERDAM

TRADE VALENTINES VARNISHES MARK

Driftwood from Alongshore

A Long Ocean Motor Boat Race Planned

The Delaware River Yacht Racing Association has fixed July 22, 1914, as the day for the start of its Philadelphia to Baltimore cruiser race. The start will be from the Camden Motor Boat Club, Pyne Point, Camden, opposite Philadelphia, at an hour to be named in the conditions of the race, now in course of preparation. The finish will be off the Maryland Motor Boat Club, on the Patapsco River, Baltimore.

The course as outlined will be from the Camden Motor Boat Club down the Delaware to Overfalls Light Vessel, to Fenwick Light, to Winter Quarter Light, to Cape Charles Light Vessel, to Tail-of-the Horseshoe, to Maryland Motor Boat Club, a total of 369 nautical miles.

All entrants are to report at all light vessels, and the race is to be under sanction of the A. P. B. A. The boats will be divided into two classes, Class A being for boats from 30 to 42 feet load waterline, and Class B from 42 feet (inclusive) upwards. The conditions of the race will be announced as soon as ready.

Albany Yacht Club Officers

On Monday, December 1, the Albany Yacht Club held its annual election for officers for 1914, with the following results:

Commodore, C. R. Butler; vice-commodore, W. L. Martin; rear commodore, Percy Redick; secretary, C. J. Hailes; treasurer, G. C. Hisgen; fleet surgeon, Dr. G. H. Houghton; official measurer, George C. DuBois; board of governors (for two years), F. P. Huested, E. A. Barvoets, J. I. Wiley.

The club cruise last August was a very successful and enjoyable one. Twelve boats were in the fleet that left the A. Y. C., and went as far as Watch Hill, R. I., stopping at numerous ports on the Hudson and Long Island Sound, returning two weeks later. It is expected that the cruise of the coming season will take a fleet of twenty or more boats.

Organization of Fairmount Park Yacht Club

At the first annual meeting of the Fairmount Park Yacht Club which was held in their temporary quarters, Thirty-third and Columbia Avenue, the following officers were elected:

Commodore, E C. Johnson; vice-commodore, Dr. Eugene Swayne; rear commodore, A. F. Lineker; secretary, C. E. Carpenter; financial secretary, Charles A. Jann; treasurer, W. J. Craig; fleet captain, J. B. Yarnall.

This is probably the youngest club of its kind in the country, but since September 25, at which time Commodore E. C. Johnson called a meeting for its organization, it has made rapid advancement, and can now show many advantages which it can offer for boat owners to become identified with this club.

They have already made application for membership with the Delaware River Yacht Racing Association and the American Power Boat Association, and application for a charter will be made in the very near future. In addition to this the club has also made application to the Fairmount Park Commission for their sanction of a hydroplane race in the Schuylkill.

Yachts Change Hands

The Hollis Burgess Yacht Agency has sold the 30-foot waterline sloop O Shima San for J. Colby Bassett, of Boston, to John Frew, of Quincy, Mass.; the 25-foot waterline auxiliary sloop Yankiana, owned by Howell Hansel, of New York, to Harry L. Wheater, of the South Boston Yacht Club; the 26-foot waterline sloop yacht Alpha, owned by Arthur F. Leary, of South Boston, to August L. Dole, of the Corinthian and Eastern Yacht Clubs; the sonder boat Harpoon, for Charles F. Adams, 2d, of Boston, to Walter D. Lane, of the Boston Yacht Club; the Herreshoff knockabout Twinkle, for Miss Hilda Cunningham, of Milton, Mass., to a Rhode Island yachtsman; the Lawley sloop Typhoon, owned by Charles A. Morss, of Boston, to William G. Kittredge, of Clarkton, Va.; the 40-foot motor boat Clara, owned by A. Walbridge, Brookline, Mass., to Frederic R. Kellogg.

Officers of White Lake Yacht Club Elected

The annual meeting and election of the officers and directors for 1914 results as follows:

Commodore, Max Lau; vice-commodore, M. Henry Guerin; rear commodore, Frank D. McGuire; secretary-treasurer, Frank A. Blair; directors, E. E. Roberts, H. A. Taylor, W. E. Bell, L. P. Conover, John C. Hicks, A. Courtney Campbell, Byron C. Dowse, Carl S. Jefferson, Willy Lau, C. A. Briggs.

New House for the Cleveland Yacht Club

Since the consolidation of the Cleveland Yacht Club and the Lakewood Yacht Club last year, the club house at Rocky River has proved too small for the combined membership. Arrangements have been made to spend $50,000 on the erection of a new house on the island in Rocky River. This will give the club not only one of the finest summer homes on fresh water, but also give them a winter club house in Cleveland.

Larchmont Yacht Club Officers for 1914

At the annual meeting, on December 3, of the Larchmont Yacht Club, the premier racing organization of the Atlantic coast, the following ticket was unanimously elected for the coming year: Commodore, Col. James Elverson, Jr., succeeding Charles Smithers; vice-commodore, Frederick C. Fletcher, and rear commodore, Arthur W. Teele. The other officers elected include Mr. Edwin C. Griffin, secretary; Mr. Joseph R. Grismer, treasurer; Charles Smithers and Robert E. Robinson, trustees.

The new commodore is the owner of the power cruiser Allegro. In accepting the position he said that he would do all in his power to make the season of 1914 a complete success, and that the good old-time Larchmont spirit must prevail and one and all pull for the common cause, namely, success.

Some New Boats

Among the new boats for 1914 for which plans have been drawn or the contract let, may be mentioned a new power cruiser of the Dream-Caliph type, designed by Bowes & Mower for use on the Great Lakes, and a 46-foot raised-deck power cruiser for Mr. Frank B. Bower, being built by the Essington Ship Building Company. John Alden, of Boston, has received an order for a 45-foot over-all cruising yawl for a Philadelphia yachtsman, which will be built this year.

R. L. Jenks, of the Cape May Yacht Club, has plans ready for a 42-foot cruiser, having a number of new features, calculated to afford room and comfort to owner and guests. The new boat planned is to have a breadth of beam of 11 feet, and is to be a combination of raised-deck and trunk cabin. One of her features will be her large main cabin amidships.

A new one-design class of 21-footers is being talked of for Massachusetts Bay next season. It is proposed to have the form and sailing lines of the boats the same, and while the sail area is limited to 550 feet, to allow any rig the owners may fancy, with any individual deck and cabin arrangement desired. A novel idea, to say the least.

Name of Boat	Name of Owner	Club	Location of Course	Distance Nautical mi.	Date of Race	Elapsed Time	Title won	Division	Class	Rating	Speed in Nautical M.P.H.	Remarks
Dream	C. L. Lagen	Yachtsmen's Club	Philadelphia - Bermuda	734	June 7-11	98:46:24	Hdk. Cruiser Championship Phila.-Bermuda	1		36.36	7.43	First
Mirna	J.N. Snellenburg	Ocean City M.B.C.	Cape May & Atlantic Ocean	16	Aug. 30th	2:06:56	Hdk. Cruiser Championship of South Jersey	1	Cruiser, under 45	40.46	7.56	"
Pilgrim	F. A. Hyde	San Francisco Y.C.	San Francisco Bay	11	July 5th	1:26:30	Hdk. Cruiser Championship of San Francisco Bay	1		40.50	7.63	"
La Ola	J. S. Hawkins	Pacific M.B.C.	San Francisco Bay	11	July 5th	1:26:31		1		40.798	7.63	Second
Mirna	J.N. Snellenburg	Yachtsmen's Club	Delaware River & Bay	178	June 20-21	24:14:17		1	Cruiser, under 45	41.45	7.34	"
Tocsam II	L.W. Hulford	Ocean City Y.C.	Cape May & Atlantic O.	16	Aug. 30th	2:03:10		1	" " "	43.20	7.79	"
Haji	H.J. Dudley	Camden M.B.C.	Delaware River & Bay	178	June 20-21	20:58:54		1	" " "	44.01	8.48	First
Nereides	C.H. Miller	Cape May Y.C.	Cape May & Atlantic Ocean	16	Aug. 30th	2:11:40		1	Cruiser, 45 & over	45.00	7.29	"
Rosanna	F.J. Hill	Corinthian, Cape May	Cape May & Atlantic Ocean	16	Aug. 30th	2:09:23		1	" " " "	40.16	7.42	Second
Barbara II	W.M. Duncan	(Not member A.P.B.A.)	Philadelphia - Bermuda	734	June 7-11	85:14:26		1		48.193	8.61	"
Clare III	J.H. Drexler	Camden M.B.C.	Delaware River & Bay	178	June 20-21	20:11:44		1	Cruiser, 45 & over	50.54	8.81	"
Marquerite II	A.B. Cartledge	Keystone Y.C.	Delaware River & Bay	178	June 20-21	17:26:42	Hdk. Cruiser Championship of the Delaware	1	" " " "	52.90	10.20	First
Edith M.	W.W. Moore	Atlantic City Y.C.	Cape May & Atlantic O.	16	Aug. 30th	Not taken		2	Express Cruiser	50.40		Second
Daneva II	C.H. Strecher	Sea Isle Y. & M.C.	Cape May & Atlantic O.	16	Aug. 30th	1:12:04		2	" "	68.94	12.73	First
Viking II	A.M. Ely	Wildwood Y.C.	Cape May & Atlantic O.	16	Aug. 30th	2:51:50		2	Glass Cabin	32.26	5.59	Second
Ben Riley	G. Bilyeu	Cape May Y.C.	Cape May & Atlantic O.	16	Aug. 30th	2:14:37		2	" "	38.34	7.13	First
Viking	W. Glenn	Wildwood Y.C.	Cape May Harbor	3	Aug. 30th	0:26:10		2	Open, under 40	35.44	6.88	Second
Anna E.	F. G. English	Holly Beach Y.C.	Cape May Harbor	3	Aug. 30th	0:18:03	Hdk. Open Boat Championship of South Jersey	2	" " "	37.98	9.972	First
Selma	G.J. Strambaugher	Sea Isle Y. & M.C.	Cape May Harbor	3	Aug. 30th	0:20:54		2	Open, 40 & over	39.98	8.61	Second
Catherine II	W.R. King	Corinthian, Cape May	Cape May Harbor	3	Aug. 30th	0:17:58		2	" " " "	44.28	10.02	First
Recalleña	G.C. Krusen	Flat Rock M.B.C.	Delaware River	29	Aug. 23rd.	1:31:33		3		74.46	19.00	Second
Intrepid II.	W. Somers	Atlantic City Y.C.	Cape May Harbor	12	Aug. 30th	0:36:13	Hdk. Racer Championship of South Jersey	3		75.76	19.89	First
Dennistoun	C. Gallagher	Cape May Y.C.	Cape May Harbor	12	Aug. 30th	0:38:07		3		80.45	18.90	Second
XQQME	J.C. Vanderslice	Camden M.B.C.	Delaware River	29	Aug. 23rd.	1:17:47	Hdk. Racer Championship of the Delaware	3		81.50	22.37	First
A.F.B.	L. Burke	Atlantic City Y.C.	Cape May Harbor	1	Aug. 30th	0:02:06+		4		82.80	28.352	2nd (Admiralty conditions)
Alparmed Jr.	R.P. Smith	Keystone Y.C.	Delaware River	29	Aug. 23rd.	1:14:52	Hdk. Hydroplane Championship of the Delaware	4		83.82	23.23	First
Teeh Jr.	T.C. Du Pont	Atlantic City Y.C.	Cape May Harbor	1	Aug. 30th	0:01:44+	Mile Championship of South Jersey	4		89.64	34.414	" (Admiralty conditions)
P.D.Q. III	A.G. Miles	Chippewa Y.C.	Alexandria Bay	87	July 31, Aug. 1&2	2:37:45		4	40 Ft. Unlimited		33.1	Second
Ankle Deep	C.S. Mantonati	Lake Geo. Reg. Assn.	Alexandria Bay	87	July 31, Aug. 1&2	2:22:25	40 Ft. Class Championship of North America	4	" " "		36.66*	First (Gold Cup" winner)

*Best lap at 40.66 nautical or 46.83 statute miles per hour.

COMPLETE RECORD OF SANCTIONED RACES, AMERICAN POWER BOAT ASSOCIATION, 1913

MAXIM SILENCER

for

MOTOR BOATS

Hiram Percy Maxim, master mind in mechanics, inventor of the Rifle Silencer, has conquered motor boat noise nuisance.

This new invention is

Not a Muffler—Not a Noise "Deadener"—But a Silencer

By whirling the exhaust gases in a circular chamber, these gases are slowed down, and then allowed to dissipate gently in the outer air. ¶ The "CHUG-CHUG" has been eliminated completely—and without back pressure. This feature alone warrants an investigation of the Maxim's merits.

Write for descriptive literature.

WILCOX, CRITTENDEN & CO., Inc.

10 So. Main Street

Sole Manufacturers of the Maxim Marine Silencer
World's Largest Manufacturers of Marine Hardware

MIDDLETOWN, CONN.

Canadian Fairbanks-Morse Co., Ltd.
Exclusive Distributors of the Silencer in Canada

American
NEWS SEC
PART II.
SUNDAY, OCTOBER 5, 1913.
ALL NOISE IS BANISHED BY MAXIM
Remarkable Device, That Shuts Out From Tired Ears the Roar of Traffic and Bedlam of Streets, Is Simple and Convenient, He Tells the American
By CHARLES A. PARKER.
Edison Says He's Only a Mechanic

MOTOR BOATING IS A PLEASURE WHEN EQUIPPED WITH A

Want to Sell Your Boat?

Then Read This

YACHTING has for *years* proved an *exceptionally good sales producer* on **Boat-For-Sale Advertisements.** Thousands of boats have been sold to YACHTING readers through these small, specially-classed announcements. They are inexpensive as a **special low rate** is made for them. Any issue of YACHTING is good, but be **sure** to use the

Special March Boat-For-Sale Number

This issue is looked upon by thousands and thousands of boat buyers as an **annual guide.** The men with money to spend for another boat **seek you** in it so don't disappoint them unless you want to run a very good chance of losing a sale.

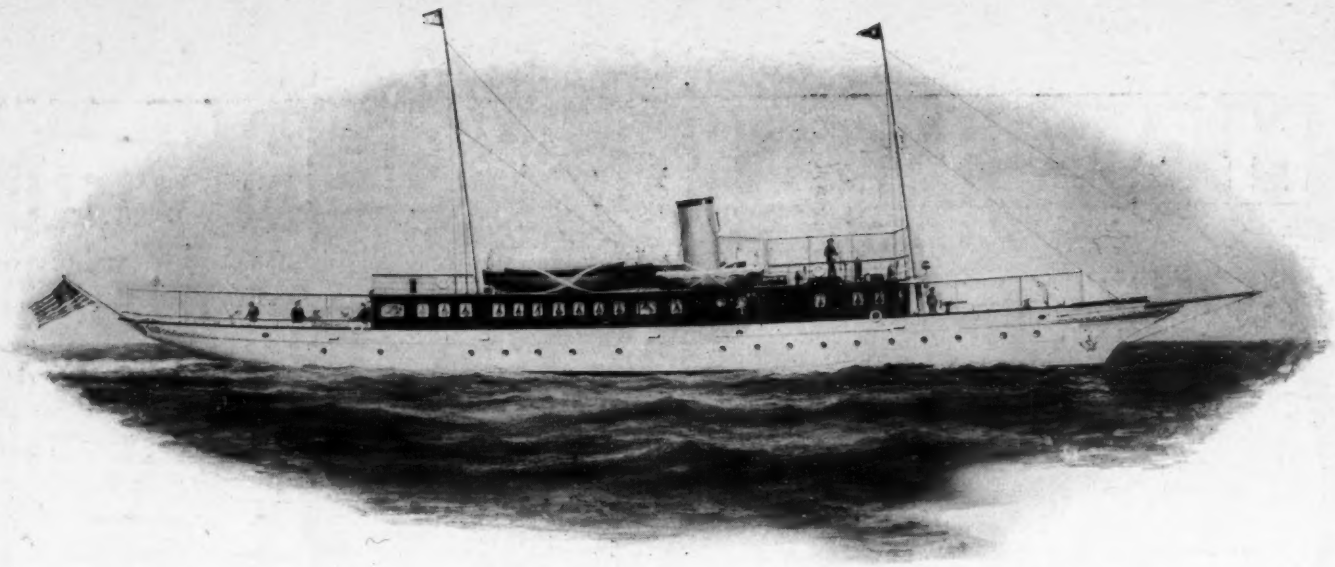
A few dollars will enable you to show a good picture of your boat (we make cut from your photo without charge) and give adequate space for description as well.

Write us for terms or communicate direct with your broker.

Prices for Boat-For-Sale Advertisements from $1.75 up.

YACHTING, 141-145 West 36th Street -- New York

Consult YACHTING'S Information Department on any of your problems. Its service is absolutely free.



The largest power cruiser in the world, a 154-footer building at Lawley's, from designs by Gielow & Orr, and powered with two 200-horse power Winton motors

Of Interest to the Skipper

The Largest Power Yacht in the World

The George Lawley & Son Corporation have in the course of construction at their yards what will be the largest gasolene motor yacht in the world —a yacht 154 feet long, 20 feet beam and 7½ feet draft, from designs by Gielow & Orr. This boat is up-to-date in every way, and is equipped with every modern piece of equipment that will bring comfort to the owner, Mr. L. T. Peterson, of Youngstown, Ohio. Ice machines, heating and ventilating systems, electric windlasses and winches will be installed, while a capacity of 6,000 gallons of gasolene in her tanks will make it possible for this boat to go abroad without carrying an extra supply of fuel, the only power boat in which this is possible.

The unusual feature of this boat is its power plants, which are furnished by the Winton Gas Engine & Manufacturing Company, of Cleveland, Ohio. These consist of two six-cylinder, 200-horsepower main engines, two 5-kilowatt, six-cylinder lighting sets and generator engines; also two six-cylinder tender motors, one 7½-horsepower, 2¼ x 3 in the 18-foot launch, and one 15-horsepower, 3 x 4 six-cylinder in the 25-foot tender.

The engine room will be finished in white, the main engines and all the auxiliaries being white enameled, so that she will have what is considered the finest engine room in existence. This boat is a splendid addition to the fleet of gasolene cruising yachts, and we believe will demonstrate to the public that it is not necessary to go to the extremely large steam yachts to get serviceable and ample accommodations in large boats that are fit for sea service.

The Durkee & Co. Tide Calendar

C. D. Durkee & Co., of 2 South Street, New York City, announce that they have just issued a tide calendar for the year 1914, which shows the time of high and low water for every day of the year at New York City, and also at all of the principal cities and harbors of the world. This is a very complete and useful calendar for every boatman. Inasmuch as the company could not get as large a quantity of these as they desired, they will have to distribute them in the order of "first come first served." Therefore it behooves every boat owner who desires one to send in a postal to 2 South Street at once.

Rapid progress is being made in rebuilding the New York warehouse at 2 South Street, which was burnt some weeks ago, and Durkee & Co. announce that they will be back in the old stand by January 15. Owing to the greatly increased demand of marine hardware and supplies of all kinds, Durkee & Co. have built a large addition to their foundry and a new storehouse on Staten Island. Both of these buildings will be in operation after January 1.

A "Speedway" Runabout Booklet

A very attractive little booklet, entitled "Outdoors on the Water," has just been issued by the Gas Engine & Power Company and Charles L. Seabury & Co., Con., Morris Heights, New York. This booklet brings home to the reader very forcefully the pleasure to be derived on the water from a small runabout, and shows to how many uses such a boat may be put. It contains a complete description of the little 30-foot runabout built by the Seabury Company, and tells just what these boats are capable of. It is most attractively illustrated, the pictures being reproduced in duotone ink, and the whole booklet provides a very interesting half-hour's reading. If you are fond of the water you had better send for it at once.

New York Agent of "Buffalo" Engines

The Gasolene Motor Company has announced the appointment of James Edward Baldwin as manager of the company's New York branch, Hudson Terminal Building, 30 Church Street, filling the vacancy caused by the death of the late W. S. MacLeod.

Mr. Baldwin, who has already taken up his new duties, is widely known in the gas engine and motor boat field. He is a designer of some note, among his best-known successes being the Fulton engine and the Kent engine. His activities in the engine business have taken him to many parts of the world, including South America and Mexico. His experience is by no means limited to the marine field, for he has successfully installed many stationary power plants which presented unusual problems. He is a member of the American Society of Mechanical Engineers and a number of boating organizations. For sometime past he has been in private practice.

J. E. Baldwin, recently appointed New York manager Buffalo Gasolene Motor Co.

Mr. Baldwin will continue and expand the scope of the Buffalo service department established by Mr. MacLeod, and he will have charge of all sales in New York and the surrounding territory.

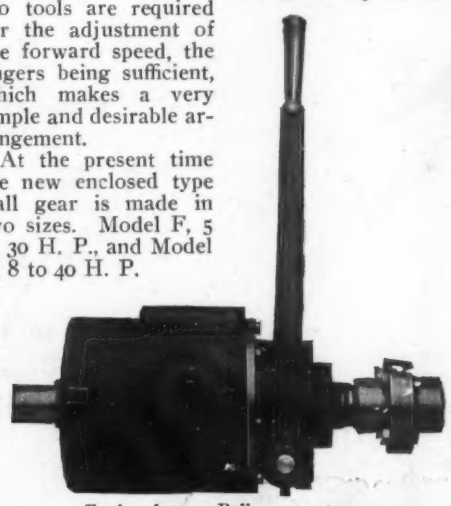
A New Type of Ball Improved Reverse Gear

The New York Gear Works, of 59 Milton Street, Brooklyn, N. Y., have brought out, in addition to their standard type of reverse gear, a new enclosed type, shown in the accompanying cut.

One of the principal features of this gear is the elimination of the brake band, which has always proved a source of annoyance in an enclosed reverse gear. This new type of gear is provided with an absolutely oil-tight case, has a splash oiling system, and is claimed to be the very highest type of reverse gear made.

No adjustment for the reverse mechanism is required—the adjustment being entirely automatic. No tools are required for the adjustment of the forward speed, the fingers being sufficient, which makes a very simple and desirable arrangement.

At the present time the new enclosed type Ball gear is made in two sizes. Model F, 5 to 30 H. P., and Model G, 8 to 40 H. P.



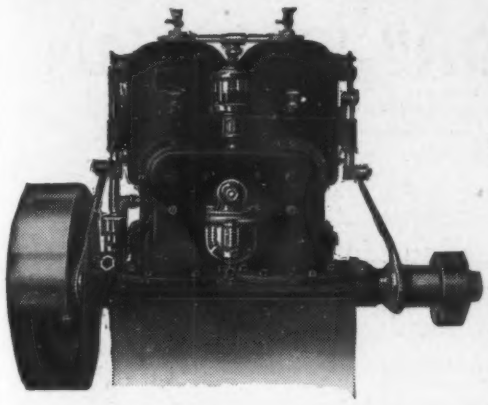
Enclosed type Ball reverse gear

New York Office for Hyde Propellers

We are in receipt of advices from the Hyde Windlass Company, of Bath, Me., manufacturers of the Hyde Turbine Type Propeller and the Irish Pneumatic Clutch Control, that from now on their interests in New York and vicinity will be looked after by Mr. R. A. Corley, formerly with the Michigan Wheel Company.

Mr. Corley will have offices at Room 508E, 30 Church Street, where he will be pleased to see all customers who may be interested in motor

(*Continued on page* 53.)



Hartford 2-Cycle Marine Engines

Made in single and double cylinders thoroughly guaranteed in every way.
Model X as shown. 5 and 10-H. P. Single, 10 and 20-H. P. Double
Regular Model. 3, 5, and 7-H. P. Single, 6 and 12-H. P. Double

The Gray & Prior Machine Co., 656 SUFFIELD STREET, HARTFORD, CONN., U.S.A.

BRANCHES: 117 Commercial Street, Portland, Me., 300 East Pratt Street, Baltimore, Md.

The Hyde Turbine Type Propeller

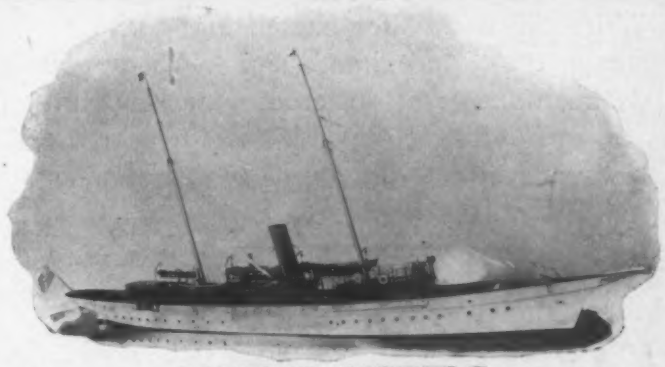
IS UNEXCELLED

For Speed, Pleasure or Commercial Boats.

Use a Hyde and Get Results

MANUFACTURED BY

HYDE WINDLASS COMPANY
BATH, ME., U. S. A.



MARINE MODELS
MANUFACTURERS OF SPECIAL MECHANICAL DEVICES
THE H. E. BOUCHER MFG. CO., 20 Fulton St., N. Y.

The peculiar fire danger on motor boats can be overcome in only one way—by the

Pyrene

FIRE EXTINGUISHER

Pyrene is designed for the seemingly inaccessible gasolene or oil fire.

Approved by the United States Steamboat Inspection Service.
Included in the lists of approved fire appliances issued by the National Board of Fire Underwriters.

Write for Booklet

PYRENE MANUFACTURING CO.
1358 Broadway, - New York City

Alton, Atlanta, Baltimore, Boston, Bridgeport, Buffalo, Chicago, Cincinnati, Cleveland, Dayton, Denver, Detroit, Duluth, Honolulu, Jacksonville, Louisville, Memphis, Milwaukee, New Orleans, Norfolk, Oklahoma City, Philadelphia, Phoenix, Pittsburgh, Richmond, St. Louis, St. Paul, Salt Lake City, San Antonio, York, Neb.
Pacific Coast Distributors: GORHAM ENGINEERING CO., San Francisco, Los Angeles, Seattle
Distr. for Great Britain and the Continent: The Pyrene Co., 29A Charing Cross Road, Lon., W. C.

KRICE Carburetor 20% More Power

30 DAYS TRIAL

We absolutely guarantee the Krice Carburetor to use less gasoline—give better control and 20% more power. Your money back if it doesn't.

The only sure way to know that you are getting *all* the power from your engine is to try a Krice Carburetor.
Write to-day for literature.

KRICE CARBURETOR CO.
1205 Oakland Ave. Detroit Mich.

31-ft. Milton Special

BOATS *of* QUALITY

Cruisers, Speed Boats, Hydroplanes

EQUAL TO THE BEST, BUT AT LOWER PRICES THAN ASKED FOR THIS CLASS OF WORK BY BUILDERS OF WIDER REPUTATION

MILTON BOAT WORKS, Rye, N. Y.
DESIGNERS AND BUILDERS

STORAGE REPAIRS SUPPLIES

Yacht Tenders to Order

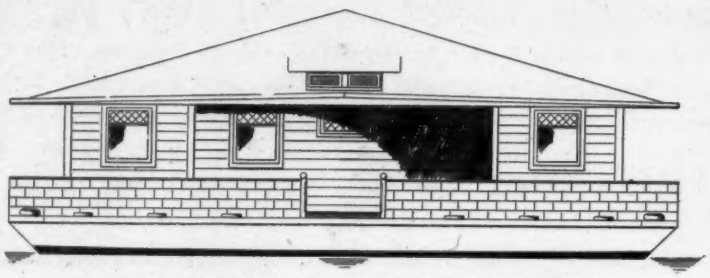
YACHT SAILS

JOHN CURTIN, Inc.
TEL. BROAD 4263 4 South St., N. Y

Consult YACHTING'S Information Department on any of your problems. Its service is absolutely free.

Houseboat Designs

MOTOR—SAILING—STATIONARY



MY "BUNGALOW BOAT" TYPE OF HOUSEBOAT

Write me to-day for sketch and estimate, stating the approximate size of boat you desire, number of staterooms and amount you are willing to spend. State whether boat is going to be built by amateur or professional builder.

GERALD T. WHITE

HOUSEBOAT SPECIALIST

136 Liberty Street, New York City

"VICTOR" CAPSTAN

STRONG COMPACT EFFICIENT

THE best and cheapest capstan on the market. You can stand up to work with a "Victor." Can be reversed in a second, to revolve in opposite direction. *Write for descriptive literature*

Send three 2c. stamps for first class Course Protractor

WILCOX, CRITTENDEN & CO., Inc.

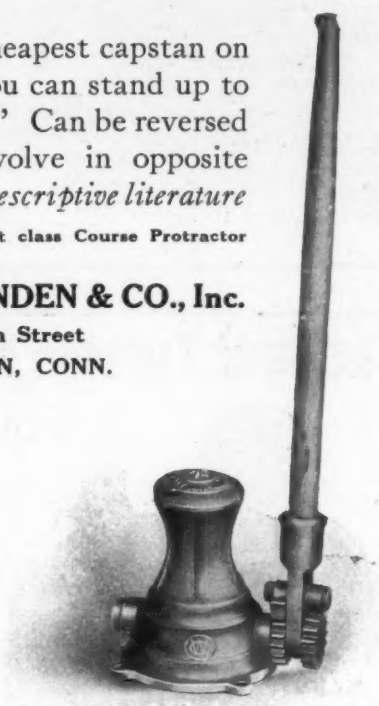
10 So. Main Street

MIDDLETOWN, CONN.

Sole Manufacturers of the Maxim Marine Silencer

World's Largest Manufacturers of Marine Hardware

Canadian Fairbanks-Morse Co, Ltd. Exclusive Distributors for Canada



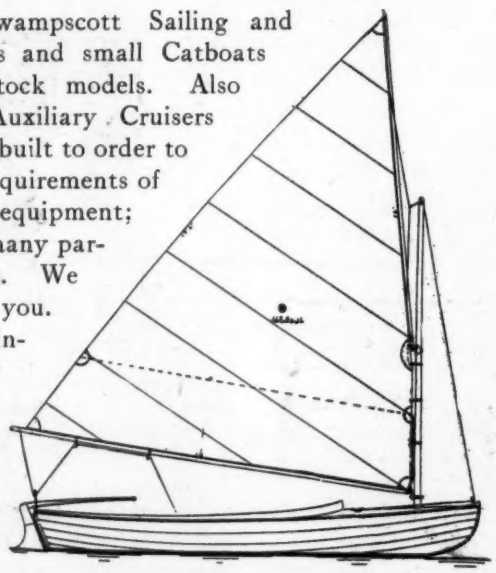
George L. Chaisson

Practical Boat Builder

16 ELMWOOD ROAD

Telephone Connection Swampscott, Mass.

Chaisson's Swampscott Sailing and Racing Dories and small Catboats built from stock models. Also Cabin and Auxiliary Cruisers designed and built to order to meet special requirements of size, finish and equipment; have pleased many particular people. We can please you. Write us, outlining briefly your requirements, and allow us to submit specifications and prices.



This snappy, up-to-date 16-foot-lap stroke Catboat complete for $100.

Dories, Tenders, Skiffs and Power Boats of Every Description.

Steering Gears

and MARINE FITTINGS for

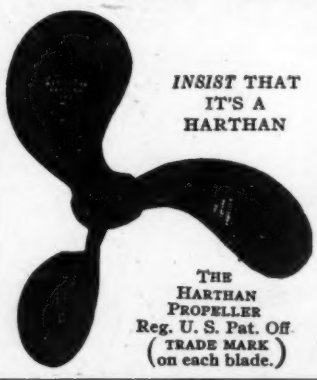
Power and Sail Yachts

Edson Manufacturing Company

Established 1859

260 Atlantic Avenue Boston, Mass.

GENUINE HARTHAN PROPELLERS



INSIST THAT IT'S A HARTHAN

THE HARTHAN PROPELLER Reg. U. S. Pat. Off. (TRADE MARK on each blade.)

Should be on every power boat

Send for Catalog and be convinced

McFARLAND FOUNDRY & MACHINE CO.

3 BREUNIG AVENUE

TRENTON NEW JERSEY

Consult YACHTING'S Information Department on any of your problems. Its service is absolutely free.

SPECIAL MONTHLY NEWS ANNOUNCEMENTS

BOAT BUILDERS

"LAWLEY BUILT"
Means the highest quality of workmanship and finish known to the fine art of boat building.
Steam, Gasoline and Sailing Yachts, Motor Boats, Tenders, Launches, Speed Boats. Write for booklet.
GEO. LAWLEY & SON CORPORATION
Est. 1866. Cable Address: "Lawley Boston" NEPONSET, MASS., U. S. A.

Let Us Figure on Your New Yacht
We are in a position to build you a complete yacht, install our twentieth century motor which we build in our own shop, furnish and equip it at prices that cannot be equaled when construction and finish are taken into consideration.
New York Yacht, Launch and Engine Co.
Morris Heights, New York

WECKLER BOAT CO.
2719 Irving Park Boulevard, Chicago, Ill.
Hydroplanes and Cruisers
Write for Catalog

RICE 20-FOOT SPECIAL LAUNCH $275.

Don't Fail to See Our 1914 Models New York Motor Boat Show Jan. 31 to Feb. 7.

A $400. Boat For $275. If you are going to buy a boat don't fail to get our catalogue.
RICE BROTHERS COMPANY, East Boothbay, Maine.

BOAT WOOD

MAHOGANY,
White Cedar, and Other Boat Woods
We have Boat Woods of every variety, in lots to meet your particular requirements. Immediate quotations. Prompt shipment
WM. P. YOUNGS & BROS.
First Avenue and 35th Street, New York
Established Over 50 Years Telephone, 2710 Murray Hill

NAVAL ARCHITECTS

MY 1913 WINNERS
"Little Joker," free-for-all Hydroplane Champion, Hudson River Yacht Racing Association.
"Alva," Class "P" Sloop Champion, Great South Bay, L. I.
"Vampire III," 14 ft. sailing Dinghy Champion, Inter-Lake Yacht Racing Association, Put-in-Bay, Perry Centennial.
"Rebel II," 20 ft. Class, Jackson Park Yacht Club, Chicago, Ill.
Detroit River Taft Cup Cat Boat Champion—Walkerville Boat Club, Canada.
JOHN A. CONNOLLY, Jr., N. A.
2645 Bedford Avenue, Brooklyn, N. Y.
RACING YACHTS A SPECIALTY

PAINTS

We are the largest marine paint manufacturers in the world.
WOOLSEY'S COPPER PAINT
For Wooden boats' bottoms in fresh or salt water. Will stand for one year if properly applied and keep the bottom clear from marine growths. Send for our new marine booklet.
C. A. WOOLSEY PAINT & COLOR CO.
Jersey City, New Jersey, U. S. A.

Marblehead Anti-Fouling Green
For the bottoms of Racing and Cruising Yachts and Launches
ABSOLUTELY GUARANTEED
STEARNS-McKAY MFG. CO., Marblehead, Mass., U.S.A.

REVERSE GEARS

Warning to Motor-Boatmen
"The gear with the unbroken main shaft"
GET A BALDRIDGE REVERSE GEAR
The unbroken main shaft can't sag and cause bearing troubles. Clutch won't jam or refuse to hold. Fully enclosed. Used everywhere. Send for book.
THE BALDRIDGE GEAR COMPANY
698 W. Grand Boulevard Detroit, Mich.

MARINE ENGINES

1913 Scripps Catalogue Just Out.
Most beautiful and interesting engine book ever issued.—1, 2, 4 and 6 cylinder motors, Regular and Extra Heavy Duty Types, 4 to 96 horsepower.—Ask about our kerosene motors and air self-starters.
SCRIPPS MOTOR COMPANY
634 Lincoln Avenue Detroit, Michigan

If You are Looking for Quality,
Efficiency, and one hundred cents' worth for $1.00, call and see the finest line of the leading two and four-cycle Marine Engines, *Ferro, Stanley, Smalley, VanBlerck, Ideal,* and *Standard-Columbian Propellers, Joe's Reverse Gears.*
GASOLENE ENGINE EQUIPMENT CO.
133 Liberty St., New York City

Holmes MOTOR Built For Business
West Mystic, Connecticut

BRIDGEPORT
Equipped with the Bridgeport vapor rectifier. We term the 1913 BRIDGEPORT the advance two-cycle motor. We have fifteen sizes in work and pleasure models. Send for free catalog L.
Our 1913 models are fitted with the Bridgeport oil transformer with which they operate perfectly on kerosene.
THE BRIDGEPORT MOTOR CO., Inc.
Bridgeport, Conn., U.S.A.

WOLVERINE
The Motor with the Bore and Stroke
The comfort of thought which comes from this motor's reliability make it one of the most desirable in the market. Successfully operated with Kerosene, Gasoline, Distillate or Alcohol.
4 CYCLE—5 to 100 H. P. *Write for catalogue*
WOLVERINE MOTOR WORKS, Bridgeport, Conn.
Formerly at Grand Rapids, Mich.

REMINGTON OIL ENGINES
"Without an Equal for Simplicity"
They start promptly. They operate with certainty. There are no adjustments. They can be slowed down. There is no danger. There is no ignition trouble. They cost the least to operate. Catalog Y gives full information.
THE REMINGTON OIL ENGINE CO.
120 Broad Street New York

America's Standard 12-H. P. Marine Engine
KERMATH
4-Cycle, 4-Cylinder, 3½-inch Bore, 4-inch Stroke
GOOD AGENTS WANTED
Manufactured and sold exclusively by
KERMATH MFG. CO., 45 E. Fort St., Detroit, Mich.

Marine Motors always on hand at less than half price
TIMES SQUARE AUTO CO.
NEW YORK 56TH ST. & B'WAY. | CHICAGO 1210-12 MICHIGAN AV.
Send for "Price Wrecker"

FRISBIE MOTORS
Are quiet in operation, economical, accessible, refined. 1-6 cylinders, 3-75 H. P. Send for booklet showing reasons why you should buy the Frisbie Motor.
FRISBIE MOTOR CO.
Coll St., Middletown, Conn.

ACCESSORIES, EQUIPMENT, ETC.

BOAT BUILDERS' SUPPLIES
Bolts, Screws, Nails, Tacks, Glue
High Grade Tools Send 8c for Catalogue
A. S. MORSS CO. 43 High Street BOSTON

"Mascot" Ship Range or Yacht Stove
Insures a Warm Cabin and Perfect Cooking Facilities
Write for "Mascot" catalog No. 11
Trade Mark
THATCHER FURNACE COMPANY
110 Beekman St., N.Y. 134 W. Lake St. Chicago

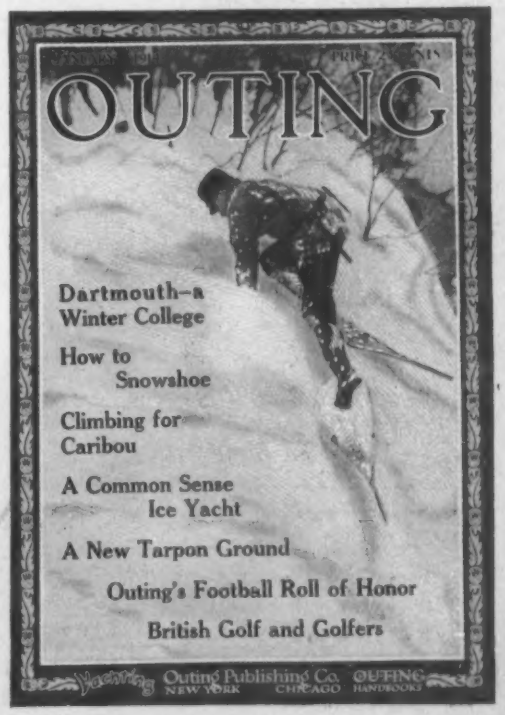
LIGHTING OUTFITS

Get a
Dayton Launch Lighting Outfit
for Your Motor Boat This Season
Complete description and prices on request.
THE DAYTON ELECTRICAL MFG. CO.
99 St. Clair St., Dayton, Ohio

SAIL MAKERS

WILSON & SILSBY
SAIL MAKERS
ROWE'S WHARF, BOSTON, MASS.
Dealers in Fine Yacht Duck, Rope and Fittings

WILLIAM H. GRIFFIN
SAIL MAKER
Special attention given to Yacht sails of all kinds, canvas work of every description. Estimates cheerfully given.
Office and Loft:
CITY ISLAND, NEW YORK



Consult YACHTING'S Information Department on any of your problems. Its service is absolutely free.

NATIONAL MOTOR BOAT SHOWS

NEW YORK
Madison Square Garden
January 31st to February 7th, 1914

CHICAGO
Coliseum
February 28th to March 7th, 1914

For space information, etc., address **IRA HAND, Secretary, 29 West 39th St., N. Y. C.**

MARINE GLUE AND HOW TO USE IT—FREE BOOKLET OF DIRECTIONS IN REGARD TO

JEFFERY'S MARINE GLUE

L. W. Ferdinand & Company - - 201 South St., Boston, Mass., U. S. A.

INDEX TO ADVERTISERS

We want to call the particular attention of YACHTING READERS to the arrangement of this Advertising Index. The advertisers in YACHTING are the most reliable and dependable to be found anywhere. They can supply EVERY want of ALL boat owners in the VERY BEST POSSIBLE WAY. No matter WHAT you may want from month to month NOW, a glance at YACHTING'S Advertising Index will show IMMEDIATELY the BEST PEOPLE to go to for it.

GET THE HABIT OF REFERRING TO THIS INDEX WHEN YOU MAKE PURCHASES.

Accessories, Engine Equipment, Etc.

Carpenter & Co., Geo. B. ..... Third Cover
Durkee & Co., C. D. ..... Third Cover
Fogg, M. W. 53
Koven & Bro., L. O. 53
Krice Carburetor Co 49
Marine Compass Co. 53
Morss Co., A. S. 51
Pyrene Mfg. Co 49
Wilcox, Crittenden & Co., Inc ..... 47 and 50

Lighting Outfits

Apple Electric Co 53
Dayton Electrical Mfg. Co 51
Prest-O-Lite Co. ..... Back Cover

Marine Engines

Bridgeport Motor Co 51
Buffalo Gasolene Motor Co 54
Evinrude Motor Co 52
Frisbie Motor Co 51
Gasoline Engine Equipment Co 51
Gas Engine & Power Co. & Chas. L. Seabury Co. ..... Second Cover
Gray Motor Co 10
Gray & Prior Machine Co 49
Holmes Motor Co 51
Kermath Mfg. Co 51
Remington Oil Engine Co 51
Scripps Motor Co 51
Sterling Engine Co 54
Times Square Auto Co 51
Winton Gas Engine & Mfg. Co ..... Second Cover
Wolverine Motor Works 51

Miscellaneous

Boucher Mfg. Co., H. E 49
Ferdinand & Co., L. W 52
Youngs & Bros., Wm. P 51

Paints and Varnishes

Stearns & McKay Mfg. Co 51
Valentine & Co 45
Woolsey Paint & Color Co., C. A 51

Propellers and Steering Gears

Edson Mfg. Co 50
Hyde Windlass Co 49
McFarland Foundry & Machine Co 50
Noyes Machine Co ..... Third Cover

Reverse Gears

Baldridge Gear Works 51
New York Gear Works 53

Sails and Sail Makers

Boston Yarn Co ..... Third Cover
Curtin, Inc., John 49
Griffin, William H 51
Wilson & Silsby 51

Yacht Builders

Chaisson, G. L 50
Gas Engine & Power Co. & Chas. L. Seabury Co. ..... Second Cover
Lawley & Son, Corp., Geo 51
Mathis Yacht Building Co 53
Milton Boat Works 49
N. Y. Yacht, Launch & Engine Co 51
Rice Bros. Co 51
Weckler Boat Co 51

Yacht Brokers and Naval Architects

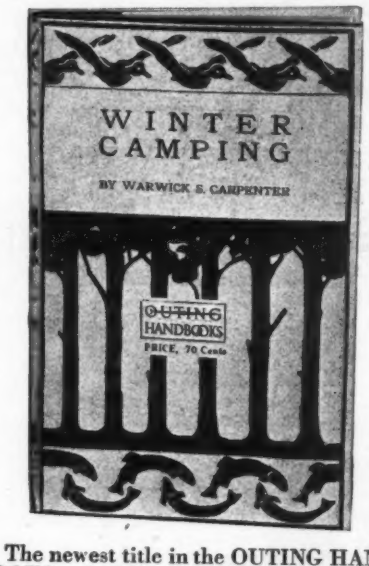
Alden, John G 8
Barney, Morgan 8
Binney, Arthur 8
Bowes & Mower 8
Bruns, Kimball & Co 8
Cox & Stevens 8
Connolly, John A., Jr 51
Gardner, Wm., & Co 6
Gielow & Orr 3
Haddock, R. M. 8
Hand, Wm. H., Jr 8
Jennings Yacht Brokerage Co 8
Jones, Frank Bowne 8
Nock, F. S 8
Owen, George 8
Seaman, Stanley M 7
Simpson & Dobson 8
Tams, Lemoine & Crane 4
Watts, J. Murray 8
Whitaker, Morris M 8
White, Gerald T 50

Yachts For Sale

Cox & Stevens 5
Gielow & Orr 3
Tams, Lemoine & Crane 4
Gardner Co., Wm 6
Miscellaneous ..... 7 and 8

Yacht Stoves

Stamford Foundry Co ..... Second Cover
Thatcher Furnace Co 51



The newest title in the OUTING HANDBOOKS. A delightfully comprehensive manual on a new sport. Send for the free complete descriptive catalogue and nearest dealer's name.

OUTING PUBLISHING CO.
141-145 W. 36th Street New York

ATTACHES to any row-boat in one minute. Speed eight miles.

TRADE MARK
EVINRUDE
DETACHABLE ROW BOAT MOTOR
EVINRUDE MOTOR COMPANY
207 T Street MILWAUKEE, WIS.

WEIGHS fifty pounds, carries like a suitcase. Catalog on request.

Please mention YACHTING when corresponding with advertisers

Of Interest to the Skipper

(*Continued from page 48.*)

boat propellers or the clutch controls. Mr. Corley will also be glad to call on the dealers in and about New York, and can undoubtedly give them better service than could be gotten from the works.

New Boston Agent for Gray Motors

The Gray Motor Company, of 12,308 Gray Motor Building, Detroit, Mich., have recently completed arrangements with Mr. W. H. Moreton, of Boston, Mass., whereby he has been appointed distributor for the Gray motors in Boston and surrounding territory, succeeding Mr. W. H. Forbes. He will be located at 218 State Street.

Mr. Moreton is a young man, very well known among the marine engine trade, and has a large personal following, and to the readers of the marine publications he is well known as one of the crew of the motor boat Detroit, which made the trip from Detroit, Mich., to St. Petersburg, Russia, something over a year ago.

Mr. Moreton's long experience in the marine engine field and his actual knowledge of the engines from an operator's standpoint, will enable him to render valuable aid to his customers.

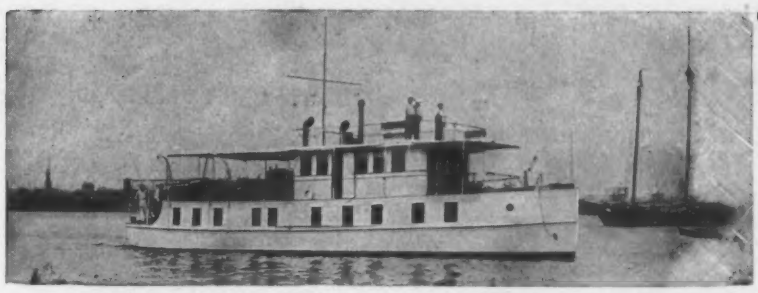
W. H. Moreton, Boston distributor of the Gray motors

Overtime at the Sterling Factory

When many people are crying about the hard times on account of the tariff, it is pleasant to note the following announcement showing that the times have not affected this gas engine company:

The Sterling Engine Company's factory has been compelled to put on a night shift, starting from December 10, the extra shift to work five nights a week. The course has been necessary owing to the large number of orders that have been placed with them during the past few weeks. They state that never before in the history of their business have they experienced such a flood of orders, and the prospects for the future are exceedingly bright, their only possible trouble being that their plant has not the facilities to fill all orders that will be received, regardless of the fact that its capacity was more than doubled early in 1913.

The Sterling Engine Company, Buffalo, N. Y., have just issued their advance catalogue. This is a very attractive 12-page booklet, giving a brief description of each of their engines. It in no way attempts to take the place of a catalogue, as the new Sterling catalogue will be issued sometime in January, this latter book being a large 48-page affair that will mark a new epoch in marine engine literature. This advance catalogue will gladly be mailed to anyone writing for it. Simply address the Sterling Engine Company, Buffalo, N. Y., and mention this magazine.



THE LODONA--

an ideal type for Florida use. 77 ft. with beam of 18 ft. 6 ins. Draws 33 ins. Speed 11 miles per hour. Owner, Dr. Archibald Thompson.

When in Florida This Winter

Look for the

MATHIS-BUILT HOUSEBOATS

The highest point yet achieved in the design of pleasure craft for use in inland waters. Seaworthiness, shallow draught, economy in maintenance, and the utmost in comfort are combined in Mathis-Built Houseboats; they possess the most desirable points of both cruiser and houseboat types with every disadvantage eliminated.

The Florida Fleet this season will include:

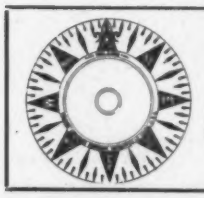
70-ft. LUNARIA	90-ft. EDNADA III	70-ft. LANAI
70-ft. COCOPOMELO	95-ft. HILDEBRET (formerly NAHMEOKA)	70-ft. IBIS

WRITE FOR FULL DETAILS

MATHIS YACHT BUILDING CO.

Specialists on 60 to 100-ft. Houseboats and Cruisers

Front and Erie Sts. CAMDEN, N. J.



The Polaris Compass

Will Hold You On The Course

Standard Quality and specially dependable in rough water. Ask about our "*Perfect*" Compass Light. No eye strain, costs less than a binnacle and more efficient.

Address Box H.

MARINE COMPASS CO.
Bryantville, Mass.

The BEST in Marine Upholstery

Gives much more satisfaction and costs no more if you go to

M. W. FOGG

202 FRONT STREET
NEW YORK CITY
MAKER, SINCE 1845

I can supply everything required to furnish and beautify the yacht—Mattresses, Cushions Draperies, Springs, Wicker Furniture (specially treated for outside use), Blankets, Bedding, etc. Quality of material and the personal element are what make my work attractive. Let me estimate.

SEND FOR BOOKLET.

THE IMPROVED **BALL**

Reverse Gear

***for* Motor Boats**

Most Reliable
Highest Grade
—Easiest to Install

Four sizes carried in stock

Send for Catalog

New York Gear Works

59 Milton Street BROOKLYN, N. Y.

APELCO

Electric Lighting and Starting Systems for Motor Boats.
Electric Lighting and Starting Systems for Automobiles.
Electric House Lighting Outfits and Golden Glow Lamps.
Apelco products are the standard by which others are judged.

The Apple Electric Co.
82 Canal Street Dayton, Ohio

High Grade Heavy Weight Tanks

For Gasolene, Water and Air of any shape or dimensions desired for any pressure. We make only work of merit.

"Light Competition Work Not Wanted."

Galvanizing of all kinds of marine work.

L. O. KOVEN & BROTHER

50 Cliff Street : : : New York

If you want information about any kind of boats, engines, accessories, etc., Yachting's Information Department will gladly supply it on request—FREE OF CHARGE.

Consult YACHTING'S Information Department on any of your problems. Its service is absolutely free.